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By-Graubard, Paul S.

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To ascertain whether subjects with similar behavior profiles also showed similar psychoeducational problems, 108 emotionally disturbed boys (aged 9 to 14 years) were studied. Teachers rated the behavior of children in their classes using the Quay Behavior Problem Checklist; subjects were also given achievement and intelligence tests. Seven subgroups were found as were some educationally relevant variables associated with behavior clusters. Groups differed to some extent with respect to IQ and associated factors; no differences were found in terms of psychometric characteristics. Indications were that grossly different curricula would not be necessary, and that the overlap between behavioral characteristics and learning characteristics was not great. When compared with normals the disturbed groups showed distinctive differences; no group, however, was retarded in reading relative to mental age, but the majority of teachers perceived subjects to be achieving far below what psychometric instruments showed. (RJ)

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October 1968

U.S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE

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Paul S. Graubard

October, 1968

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Yeshiva University

New York City, New York

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Table of Contents


| | |
|---|---|
| THE PROBLEM | 1 |
| Behavioral Checklist | 2 |
| METHOD | 5 |
| Subjects | 5 |
| Completion of Behavioral Checklist and Testing Procedure | 7 |
| Psychoeducational Measures | 10 |
| Intelligence | 10 |
| Reading | 11 |
| Procedures for Data Analysis | 15 |
| Checklist | 15 |
| Achievement and Intelligence Measures | 16 |
| RESULTS | 19 |
| Description of the Seven Groups | 23 |
| Groupings as Predictors | 24 |
| DISCUSSION | 43 |
| Implications | 51 |
| Implications of Data | 55 |
| Rosenthal Effect | 55 |
| Hierarchies for Teacher Training | 56 |
| Emotional Disturbance as the Predictor Variable | 57 |
| REFERENCES | 59 |
| APPENDIX A Behavior Problem Checklist | 63 |
| APPENDIX B Illinois Test of Psycholinguistic Abilities | 65 |
| Reading and IQ Variables | 67 |

# THE PROBLEM

Much research and educational programming concerning emotionally disturbed children contains the implicit assumption that these children are sufficiently homogeneous to justify their being grouped without further reference to possibly meaningful differences within this category. To what extent is this assumption tenable? Within the clinical field it has long been the practice to differentially diagnose behavior disorders according to a particular system [e.g. Kraepelin (1895), Fenichel (1945), American Psychiatric Association (1952)] but these systems have not been utilized productively as far as classroom practice is concerned.

A major reason for such lack has been the poor reliability of classificatory schemas (Eiduson et al, 1966). In one study (Rabinovitch, 1964) which attempted to measure differences in achievement as a function of differential diagnosis, questionable reliability of the classification schema casts doubt on the differential achievement findings. On the other hand, given an adequate classificatory system with sufficient validity and reliability, one could justifiably reopen the question of the efficacy of classifying disordered children in the school context.

Recently Quay (1966a, 1966b, and Quay and colleagues, 1966a, 1966b) has described a method of classifying children with behavioral disorders. Quay's method utilizes a behavioral checklist and shows promise in objectivity and reliability as well as being relevant to the problem of classifying children within the public school framework.

Behavioral Checklist

Quay's method derives from a scale first developed by Peterson et al (1961). The scale came from a checklist of 90 referring complaints of symptomatic behaviors for 500 children recommended to a child guidance child. The checklist items were then subjected to factor analyses on a variety of populations and the behavioral checklist was reduced to 58 items.

The Behavior Problem Checklist (see Appendix A) categorizes observable behaviors and requires that the judge or rater see the child in living situations or take information from case histories. Thus, inferential attributes are minimal. Several studies (Quay 1966a, Quay, Morse and Cutler, 1966a) have shown that three independent dimensions account for about two-thirds of the variance of the interrelationships among the problem behaviors.

Research reveals that the first dimension of the scale includes aggressive, hostile behavior and is usually labelled "conduct disorder," "unsocialized aggression," or "psychopathy." The second dimension represents anxious, depressed, introvertive behavior, and is usually labelled "personality problem" or "neuroticism." The third dimension involves disinterest, apathy, daydreaming, and passivity. The labels of "inadequacy," "immaturity," and "autism" have been used to describe this dimension (Quay, Morse, and Cutler, 1966a). Quay (1963) has suggested that a fourth dimension -- socialized delinquency -- applies to a proportion of inner city youth who are not disturbed in the

classical sense, but who are at odds with middle-class schools and teachers.

This socialized delinquency factor has been hypothesized from questionnaire and case history analyses, although Quay (1964) has pointed out that these items are not likely to be observed in schools and institutions. The scale is sufficiently rigorous to meet the basic tenets of science: it can be subjected to replication, item and factor analysis, reliability counts, and it can be used to predict.

The ability of the Behavior Problem Checklist to differentiate between children stimulated the possibility of classroom application. This study examines the classroom behavioral concomitants which might be associated with the classified subgroups.

Specifically, the study examines the following questions:

1) What behaviors (if any) do disturbed children have in common, both among themselves as subgroups as well as with normal children?

2) What is the extent of the consonance or homogeneity among behavioral attributes which characterize subgroups of disturbed children and are the behaviors of disturbed children (e.g. boisterousness, stealing, seclusiveness) related to their learning characteristics on such variables as IQ, reading level, and the Illinois Test of Psycholinguistic Abilities (ITPA) profile? Further, what are the curricular implications of and suggested groupings for the patternings which emerge?

3) In general, how useful can the Behavior Problem Checklist be to teachers and administrators in the practice of special education?

This study also examines another common assumption, that disturbed children are academically retarded. This assumption has been questioned by Balow (1966). After reviewing the literature he stated: "A commonly accepted belief is that emotionally disturbed children as a group are deficient in school skills, particularly in reading. The evidence for the converse of this, that reading-disabled pupils show more maladjustment than pupils making normal progress, appears clear, but whether disturbed children are also disabled in school skills is moot (1966, p.124)."

In regard to this issue one asks what is an appropriate frame of reference against which we test the child's academic achievement? Specifically, what subgroupings of emotionally disturbed children show retardation relative to expectancy? Therefore, the present study will also examine these questions by comparing different subgroups constituted on the basis of the Checklist against expectancies which have been based upon both chronological and mental age.

In summary, the purpose of this study is to examine the feasibility of utilizing the Behavior Problem Checklist and academic and intellectual variables which are associated with subgroups of disturbed children so these subgroups can be contrasted amongst themselves and with normals.

## METHOD

### Subjects

One hundred and eight boys with various behavioral problems served as subjects (Ss) in this study. The Ss were selected from a residential treatment center, special classes for the emotionally disturbed in regular New York City elementary schools, and a special service school in New York City. Ss ages ranged from 9 to 14 years. Ninety per cent of the Ss were Negro or Puerto Rican. This high percentage reflected the population composition at the special service school and the residential treatment center, as well as the composition of the special classes in the particular areas chosen. Only boys were used in this investigation since boys comprise approximately 80 percent of the population in special classes for the emotionally handicapped (Morse et al., 1964).

New York City Board of Education regulations forbid inquiry into parental occupation and social class, but the vast majority of Ss received free lunch and lived in census tract areas which strongly suggested that most Ss came from families receiving Welfare (Class VII on the Warner Scale, 1964). Similarly, no official records of the pupil's race can be maintained so that the ethnicity of each child was necessarily noted visually. Specifically, Ss were selected from the following sources:

1. Floyd Patterson House - Wiltwyck School for Boys (P.H.). The Floyd Patterson House is a residential treatment center in

New York City which provides services for boys who have not been able to be maintained at home. Most of the children were court remanded, came from the lowest social class as defined by Warner (1964), and in many cases had one or more siblings who have had trouble with the law (Minuchin et. al, 1964). All 23 children in residential treatment at the Floyd Patterson House participated in this study.

2. Junior Guidance Classes (J.G.) of the New York City Board of Education. These classes are maintained by the New York City Board of Education for elementary school-aged emotionally disturbed children. Ss in this study were chosen from closed register Junior Guidance Classes or classes which were chosen at the beginning of a school year and which remained as a unit for the duration of that year. Closed register classes include both boys and girls and aggressive and withdrawn children.

3. P.S. _____, a special service school (S.S.), also contributed Ss to this study. Originally, Ss from the special service school were intended as a comparison group to be contrasted with the samples of disturbed Ss. A Special Service School is defined by the New York City Board of Education as a school which, because of its depressed socio-economic level and multiplicity of problems, qualifies for extra services such as remedial reading, nursing, attendance officers, etc. The particular special service school used in this study was selected because of the willingness of its administration to participate in a research study. Like the Junior Guidance Classes,

the special service school had regular classroom teachers (3) and an auxiliary or cluster teacher who worked with all classes. A fourth and fifth grade were randomly selected from this school. After talking with teachers and observing classes the investigator felt that many of the children in the school presented problems similar in number and nature to those of the disturbed groups (residential treatment and Junior Guidance). Thus, maintaining a distinction between the two groups would be illogical. Children from the special service school were then added to the overall disturbed sample.

To verify this impression of the special service school classes, three judges observed classrooms in session and agreed that a meaningful distinction could not be made between the special service school and the special classes. This observation was empirically verified by comparing the total mean scores on the Checklist of a random sample (N = 10) from the special service school with a random sample (N = 10) from the residential treatment center. The Mann-Whitney U Test (Siegel, 1956) was used with a resulting U of 51. The probability of such a U occurring = .726 and the null hypothesis that the sample from the treatment center and the special service school were similar could not be rejected.

Completion of Behavior Checklist and Testing Procedure

Each teacher involved in the study was trained, licensed, and had extensive educational contact with each S. It was explained to raters that each item on the scale (to be described in the next section)

was to be checked independently of other items and teachers could not collaborate with their colleagues to rate Ss.

In a number of groups two teachers rated the child's behavior but only one rating (the classroom teacher's) was used for the classification of Ss, while the rating of the auxiliary teacher was used to calculate the reliability of the scale.

Previous research on the checklist has shown great stability for the checklist over time (Quay, 1964), although previous attempts at establishing the checklist reliability were confounded by the lack of two raters seeing the same child under the same circumstances. While only one rater was used in this study for the statistical analysis (to be described) two raters were able to observe the same child in roughly the same circumstances (classroom behavior) in both the Junior Guidance classrooms as well as the special service school. According to the rules for the checklist, raters are to check "0" if the specified behavior does not present a problem, "1" if it constitutes a minor problem, and "2" if it presents a major problem. For the purposes of scoring, the trait is scored as 1 (present) or 0 (not present) (Quay, 1966c).

Since the scoring was binary, two raters should find agreement with each other 50 percent of the time by chance alone. It was found in this study that seven pairs of raters, observing the same child, were able to agree on whether the child presented a

problem or not (irrespective of degree or magnitude) 72.4 percent of the time.

When magnitude or degree is taken into account (i.e.rated on a 3-point scale) two raters should agree with each other 1 out of 3 times on a chance basis alone. In this study raters agreed with each other 62.9 percent of the time.

It appears that using this scale is certainly more effective than chance alone but its reliability still appears to be too low to use this instrument as a measure of an individual child's performance. Its cluster content is quite high; that is, it appears that if a judge checks certain items on an individual child he will also check other items which will form a cluster, but it does not appear that judges can yet agree with a very high degree of reliability on whether item X or Y constitutes a problem for a particular child. There is a great need for sharpening the parameters of the instrument, so that behavior is more accurately described as a major or minor problem. This would then reduce the subjective factor of what constitutes a problem and would make the instrument more feasible for individual children. However, the instrument does appear adequate to use with groups.

After each teacher (N=11) filled out the behavioral checklist on Ss in their classes, each S was then tested individually on achievement and intelligence tests. Most testing was done by second-year graduate students in educational psychology who had completed one year

of supervised individual testing and who had at least two years of teaching experience. In addition, some testing was done by the principal investigator. After the individual testing, groups were then tested with achievement batteries. Testing was done by the research assistants with the classroom teachers in the rooms.

The battery of psychological tests was privately administered in two parts, each lasting approximately 90 minutes.

Testing and completion of the behavioral checklist were done after teachers had been able to observe and work with children for at least a three-month period. All testing was accomplished within two months of the initial classification.

Psychoeducational Measures

Intelligence. In addition to the behavioral scales, all subjects were tested for intelligence on the Peabody Picture Vocabulary Test (PPVT). This test is particularly effective in establishing rapport, and does not penalize Ss handicapped in reading. It is sufficiently valid and reliable for classificatory purposes. Thus, it can substitute for the more time-consuming and difficult to administer WISC (Graubard, 1967; Himmelstein and Herndon, 1962).

Based on oral reading scores, classes were also administered the appropriate form of the California Test of Mental Maturity (Short Form) (1962). The California Test of Mental Maturity was chosen as a complement to the PPVT because it is a measure covering both a wide and specified range of mental functioning. Therefore, a patterning of cognitive abilities was ascertained rather than simply a global IQ score.

The California Test of Mental Maturity provides the following scores:

1. Logical reasoning
2. Numerical reasoning
3. Verbal concepts
4. Memory
5. Language total
6. Non-language total
7. Total

Reading. Each S was administered the Word Recognition and Listening Comprehension section of the Spache Diagnostic Reading Scale (1963). The Spache was chosen because its norms are recent and it has been judged (Buros, 1966) as being one of the best instruments available to test reading skills. It was also felt that an oral reading test would eliminate the necessity of giving standardized reading tests to non-readers and having them receive misleading scores because of required extrapolation scores.

Classes were also given the appropriate form of the California Reading Test after their individual Spache Word Recognition scores had been determined. Ss who read on a third-grade level or above were given the elementary form of the California Reading Test which yields the following scores:

1. Reading Vocabulary
2. Reading Comprehension
3. Total Reading

Ss below that level were given the primary form.

The following table shows the Group, CA, IQ, Reading Level, and source of referral for the 108 boys:

Table 1

| S | Group | CA in months | IQ (PPVT) | Reading (Calif.) in months | Comp. | Origin |
|---|---|---|---|---|---|---|
| 104 | 1 | 112 | 101 | | 108 | S.S. |
| 108 | | 115 | 70 | | 106 | S.S. |
| 103 | | 121 | 109 | | 98 | S.S. |
| 014 | | 98 | 83 | | 64 | J.G. |
| 017 | | 115 | 107 | | 108 | J.G. |
| 094 | | 112 | 110 | | 112 | S.S. |
| 056 | | 152 | 90 | | 154 | P.H. |
| 110 | | 109 | 93 | | 113 | S.S. |
| 063 | | 113 | 85 | | 64 | P.H. |
| 065 | | 123 | 95 | | 81 | P.H. |
| 009 | | 107 | 81 | | 85 | J.G. |
| 023 | | 98 | 100 | | 82 | J.G. |
| 102 | | 125 | 130 | | 102 | S.S. |
| 064 | | 123 | 76 | | 85 | P.H. |
| M | | 116 | 95 | | 97 | |
| S.D. | | 13.3 | 15.9 | | 23.24 | |
| 004 | 2 | 88 | 83 | | 64 | J.G. |
| 008 | | 94 | 88 | | 78 | J.G. |
| 018 | | 103 | 98 | | 86 | J.G. |
| 050 | | 132 | 94 | | 87 | J.G. |
| 006 | | 86 | 87 | | 75 | J.G. |
| 061 | | 113 | 78 | | 75 | P.H. |
| 005 | | 95 | 88 | | 88 | J.G. |
| 079 | | 135 | 71 | | 102 | S.S. |
| 085 | | 122 | 91 | | 106 | S.S. |
| 007 | | 87 | 104 | | 64 | J.G. |
| 062 | | 132 | 77 | | 78 | P.H. |
| 071 | | 157 | 73 | | 111 | P.H. |
| 059 | | 159 | 67 | | 91 | P.H. |
| 111 | | 123 | 95 | | 88 | S.S. |
| 002 | | 100 | 81 | | 75 | J.G. |
| 022 | | 97 | 107 | | 78 | J.G. |
| M | | 114 | 86 | | 84 | |
| S.D. | | 24.0 | 11.6 | | 13.6 | |

Table 1 (Cont'd)

| S | Group | CA in months | IQ (PPVT) | Reading (Calif.) in months | Comp. | Origin |
|---|---|---|---|---|---|---|
| 099 | 3 | 118 | 74 | | 106 | S.S. |
| 101 | | 112 | 85 | | 97 | S.S. |
| 044 | | 104 | 96 | | 78 | J.G. |
| 043 | | 100 | 111 | | 75 | J.G. |
| 083 | | 127 | 71 | | 119 | S.S. |
| 107 | | 111 | 113 | | 113 | S.S. |
| 105 | | 129 | 75 | | 107 | S.S. |
| 097 | | 120 | 93 | | 108 | S.S. |
| 106 | | 113 | 76 | | 93 | S.S. |
| 037 | | 98 | 113 | | 81 | J.G. |
| 096 | | 116 | 84 | | 108 | S.S. |
| 027 | | 90 | 83 | | 64 | J.G. |
| 080 | | 139 | 86 | | 106 | S.S. |
| 067 | | 124 | 84 | | 101 | P.H. |
| M | | 114 | 89 | | 97 | |
| S.D. | | 13.3 | 14.4 | | 16.3 | |
| 016 | 4 | 109 | 93 | | 106 | J.G. |
| 028 | | 85 | 85 | | 82 | J.G. |
| 047 | | 125 | 82 | | 92 | J.G. |
| 011 | | 108 | 101 | | 82 | J.G. |
| 049 | | 134 | 98 | | 104 | J.G. |
| 013 | | 99 | 123 | | 104 | J.G. |
| 026 | | 95 | 93 | | 64 | J.G. |
| 075 | | 118 | 105 | | 86 | P.H. |
| 077 | | 108 | 91 | | 88 | P.H. |
| 038 | | 115 | 96 | | 104 | J.G. |
| 045 | | 103 | 90 | | 98 | J.G. |
| 010 | | 109 | 86 | | 82 | J.G. |
| 054 | | 121 | 85 | | 87 | J.G. |
| 025 | | 84 | 98 | | 81 | J.G. |
| 091 | | 131 | 95 | | 104 | S.S. |
| 048 | | 120 | 110 | | 82 | J.G. |
| 029 | | 94 | 92 | | 86 | J.G. |
| 078 | | 140 | 124 | | 102 | P.H. |
| 040 | | 107 | 80 | | 78 | J.G. |
| 053 | | 122 | 77 | | 85 | J.G. |
| 051 | | 140 | 56 | | 81 | J.G. |
| 034 | | 116 | 90 | | 98 | J.G. |
| M | | 113 | 93 | | 90 | |
| S.D. | | 15.9 | 14.6 | | 11.2 | |

Table 1 (Cont'd)

| S | Group | CA in months | IQ (PPVT) | Reading (Calif.) in months | Comp. | Origin |
|---|---|---|---|---|---|---|
| 072 | 5 | 178 | 82 | | 106 | P.H. |
| 074 | | 159 | 80 | | 128 | P.H. |
| 041 | | 119 | 82 | | 81 | J.G. |
| 066 | | 138 | 99 | | 117 | P.H. |
| 042 | | 85 | 100 | | 98 | J.G. |
| 060 | | 134 | 76 | | 125 | P.H. |
| 024 | | 118 | 93 | | 88 | J.G. |
| 032 | | 113 | 114 | | 107 | J.G. |
| 058 | | 143 | 114 | | 137 | P.H. |
| 087 | | 128 | 100 | | 98 | S.S. |
| 030 | | 109 | 83 | | 89 | J.G. |
| M | | 129 | 93 | | 107 | |
| S.D. | | 25.3 | 13.4 | | 18.1 | |
| 093 | 6 | 130 | 82 | | 113 | S.S. |
| 090 | | 126 | 88 | | 104 | S.S. |
| 081 | | 142 | 86 | | 95 | S.S. |
| 082 | | 137 | 74 | | 98 | S.S. |
| 001 | | 106 | 65 | | 75 | J.G. |
| 100 | | 119 | 81 | | 108 | S.S. |
| 073 | | 142 | 67 | | 107 | P.H. |
| 019 | | 98 | 86 | | 86 | J.G. |
| 069 | | 147 | 87 | | 113 | P.H. |
| 036 | | 113 | 103 | | 87 | J.G. |
| 092 | | 143 | 62 | | 97 | S.S. |
| 070 | | 153 | 88 | | 103 | P.H. |
| 109 | | 133 | 68 | | 103 | S.S. |
| 003 | | 95 | 79 | | 81 | J.G. |
| 084 | | 126 | 74 | | 118 | S.S. |
| M | | 127 | 79 | | 99 | |
| S.D. | | 17.9 | 11.0 | | 12.96 | |
| 088 | 7 | 123 | 115 | | 134 | S.S. |
| 012 | | 123 | 68 | | 83 | J.G. |
| 033 | | 113 | 70 | | | J.G. |
| 015 | | 112 | 85 | | 83 | J.G. |
| 031 | | 114 | 102 | | 113 | J.G. |
| 076 | | 128 | 102 | | 135 | P.H. |
| 046 | | 107 | 95 | | 78 | J.G. |
| 035 | | 109 | 118 | | 95 | J.G. |
| 086 | | 134 | 89 | | 102 | S.S. |
| 057 | | 139 | 140 | | 148 | P.H. |
| 089 | | 130 | 93 | | 122 | S.S. |
| M | | 121 | 98 | | 109 | |
| S.D. | | 10.8 | 21.0 | | 24.8 | |

## Procedures for Data Analysis

Checklist. Since the purpose of the study was to ascertain if Ss with similar behavior profiles also showed similar psychoeducational problems, the first step of this investigation involved the assignment of discrete behavioral categories to Ss. It has been shown (Quay, Morse, and Cutler, 1966a) that it is possible to grossly categorize Ss through statistical analysis and three independent factors can be isolated. It might have been possible to place Ss in categories by sorting them according to their falling one or more SD's above the mean in one category, and one SD below the mean in other categories. The difficulty with this procedure is that "mixed" cases and Ss who did not show extreme scores on only one factor would have had to be excluded from the analysis.

Fortunately, Cohen (1966) has provided a method which seems eminently suitable to the Quay Checklist data collected in this study. The method, known coincidentally as Q-analysis, is a version of an earlier factor-analytic technique and has been developed for marketing application. In Q-analysis, item responses are correlated and factor-analyzed across Ss rather than across tests. Therefore, factors reflect extracted commonalities among individuals, yielding an empirical typology. Cohen's approach makes optimal use of high-speed computer applications to facilitate the analysis which, if analyzed by other approaches (e.g. hand and desk calculator) are extremely unwieldly and impractical.

Achievement and intelligence measures. All achievement and intelligence scores were converted to age equivalencies, so that all subsequent comparisons would be made on a common basis.

In order to gain further understanding of the process or purported components of achievement, a proportionate sample of Ss were then randomly chosen from each of the subgroups for further study.

A clinical model of the reading process was used for this analysis. The model to be used was initially devised by Kass (1962) and used by Graubard (1965) and in this analysis theoretical expectancy was opposed to actual achievement along the dimensions of this communication model. This model is shown in Figure 1.

The model is based on the Illinois Test of Psycholinguistic Abilities (ITPA) (1961) which was developed to help identify psycholinguistic abilities and deficits in children. The theoretical base for this test is described in detail by Kirk and McCarthy (1961). The ITPA follows a model of the communication process postulated by Osgood (1957). It consists of nine subtests, six at the representational or meaningful level, and three at the automatic-sequential level. At the representational or meaningful level, each process--decoding, association, and encoding-- is tested via the channel necessary to accomplish tasks: auditory or visual input or decoding, visual-motor or auditory-vocal association, and motor or vocal output or decoding.

At the automatic-sequential level, tests were not devised to assay decoding, association, and encoding because of lack of theoretical

clarity at this level. Nevertheless, the automatic-sequential aspects of language are essential and these tests tap auditory and visual memory as well as organizational ability and syntax. McCarthy and Kirk (1963) provide a complete description of the test and its properties. Because this test examines processes, it has vast potential for discovering and differentiating attributes of various populations.

Statistical evidence which relates chronological age, mental age, and social class to the ITPA is reported in the test manual (1961). Kass (1962) found the ITPA theoretically sound in examining reading disability. Graubard (1965) examined psycholinguistic correlates of reading disability in disturbed delinquents, using a reading model based on the ITPA. The model was effective in differentiating correlates of reading disability within the group and also was effective in showing discrepancies of this group from normal expectancy. It is for this reason that this model and test battery were used.

Kass (1962) has suggested extending the communication model at the automatic-sequential level. The following extensions to the model were added:

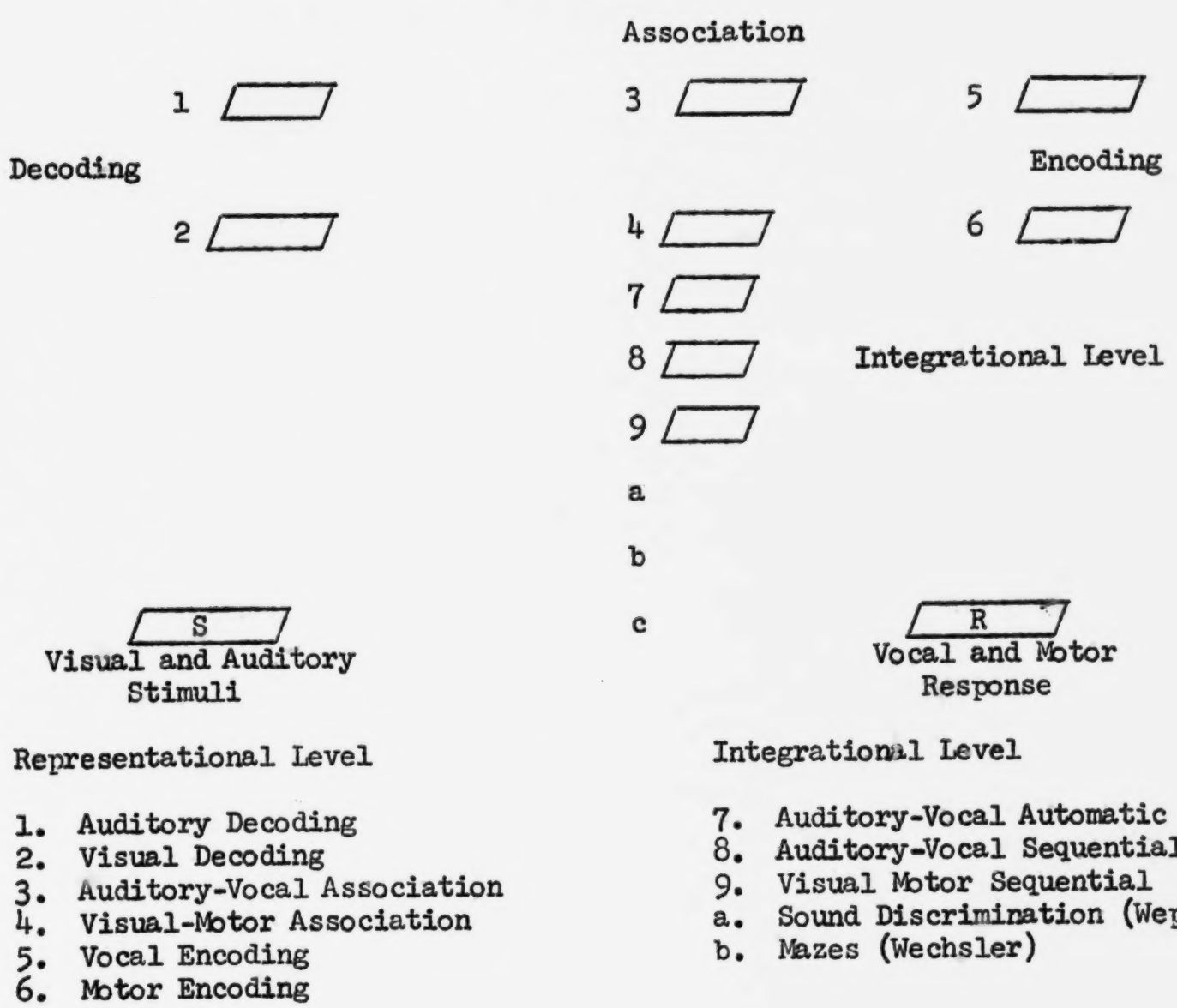
Auditory: Auditory Discrimination (Wepman, 1958)
Perceptual/motor: Bender gestalt
Birch, Belmont Intersensory Integration Test (1964)
Extension testing: (Silver and Hagin, 1960)

The extension testing was dropped from the analysis when the inter-judge reliability coefficient was found to be too low to use this test in a psychometric analysis.

## Figure 1

Clinical Model of Reading

From Kass (1962)




Representational Level

1. Auditory Decoding
2. Visual Decoding
3. Auditory-Vocal Association
4. Visual-Motor Association
5. Vocal Encoding
6. Motor Encoding

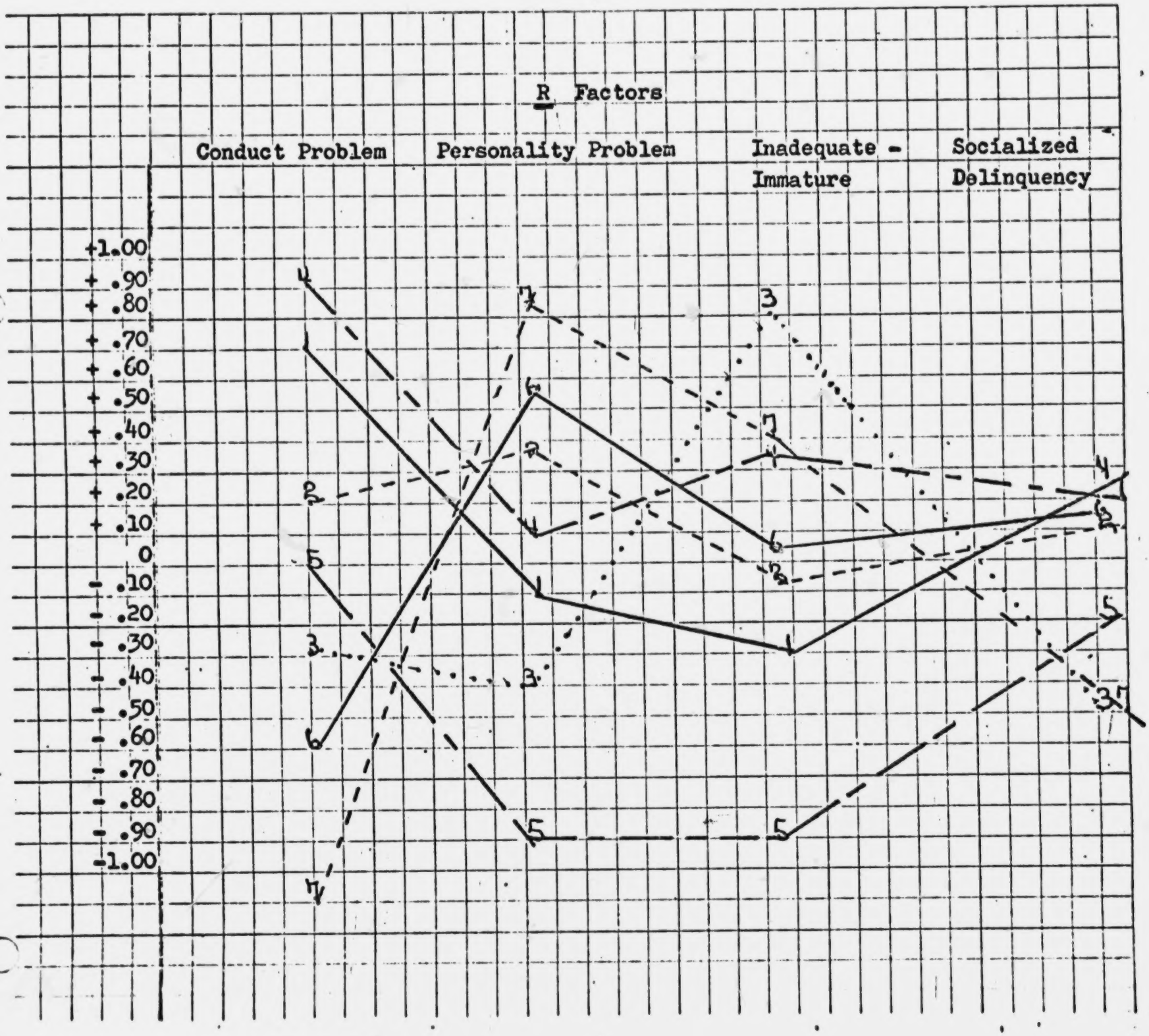
Integrational Level

7. Auditory-Vocal Automatic
8. Auditory-Vocal Sequential
9. Visual Motor Sequential
a. Sound Discrimination (Wepman)
b. Mazes (Wechsler)

Results

Following Cohen's procedure for Q-analysis Ss were divided into 7 groups on the original 4 R factors -- conduct problem, personality problem, inadequate-immaturity, and socialized delinquency. Factor loadings for the 7 groups on the 4 R factors are shown in Figure 2.

Figure 2



In order to ascertain whether there were real differences on the factors among the 7 groups the data were subjected to an analysis of variance. The results are shown in Table 2.

Table 2

Analysis of Variance between Q Groups on R Factors

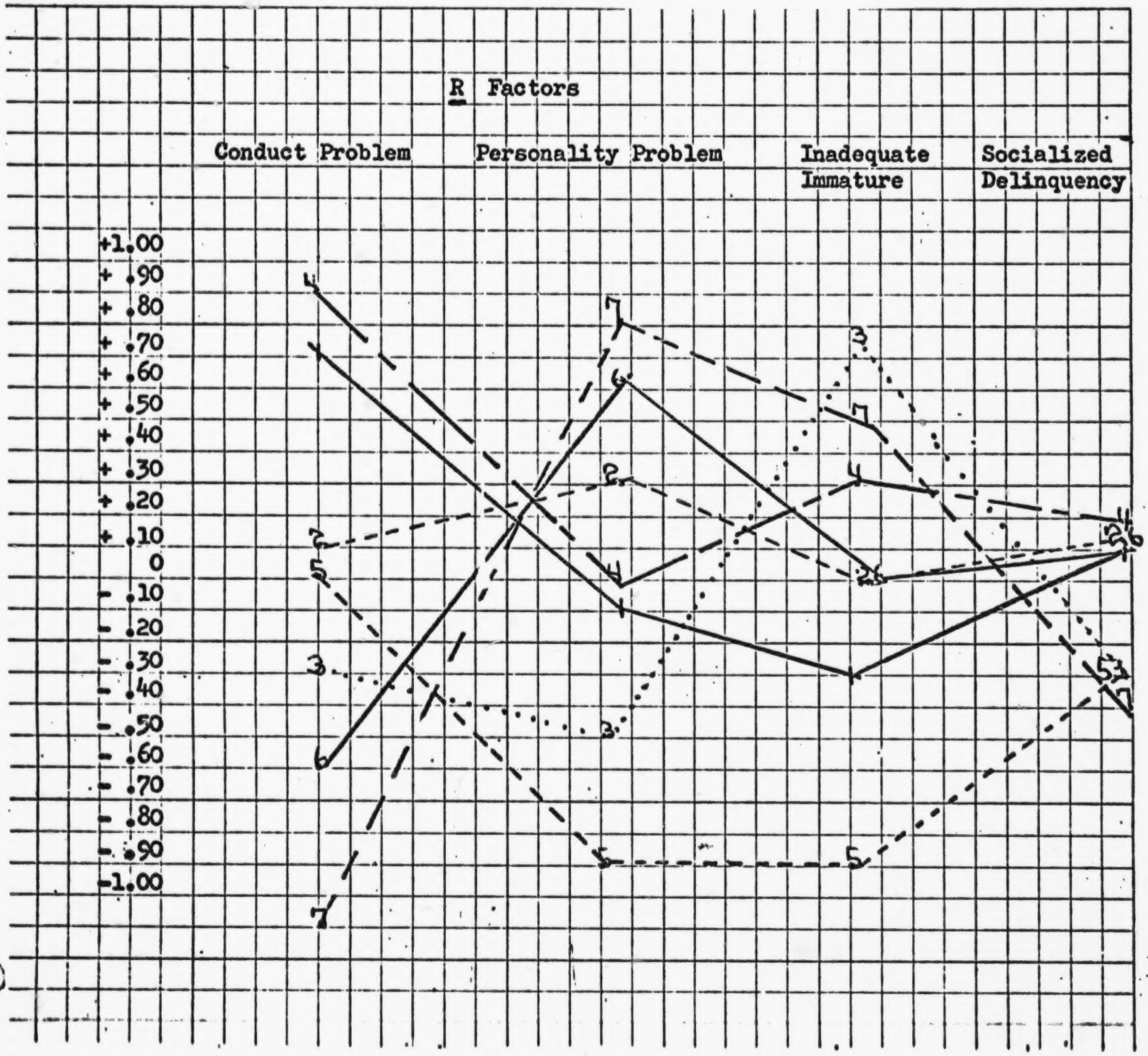
| R | factor | F |
|---|---|---|
| 1. | Conduct Problem | 12.659** |
| 2. | Personality Problem | 5.728** |
| 3. | Inadequate-Immature | 4.722** |
| 4. | Socialized Delinquency | 1.579 n.s. |
| | df 6,100 | F = 2.19 @ 05 xx<br>2.99 @ .01 |

Thus the seven groups differ significantly on conduct, personality, and immaturity. They do not differ on socialized delinquency.

The fact that socialized delinquency did not emerge as a separate factor can be interpreted an artifact of observing Ss primarily in school situations, since the defining characteristics e.g., belonging to a gang, stealing in a group, etc., are not readily observable in a school setting and can be more readily ascertained from case history data and parent reports (Quay, 1964).

The Scheffe Multiple Range Test (1959) was then used to assess the differences between groups on the 3 R factors which did differentiate the groups (Figure 3). Beacause of the stringency of the Scheffe, the .10 level of significance was used, as is the recommended practice (Hays, 1963).

The following graph (Figure 3) illustrates the points at which statistically significant differences between groups emerged. Scheffe results are indicated at the bottom of the figure. Table 3 summarizes findings based on the Scheffe analyses, which show significant and non-significant effects between groups on the 3 remaining R factors.



## Table 3

Comparisons between the Seven Groups and Significance of Differences on 3 R Factors:

Conduct Problem (CP), Personality Problem (PP), and Inadequate-Immature (I.I.)

| | | | C.P. | P.P. | I.I. |
|---|---|---|---|---|---|
| 7 - | different from | 6 | Yes* | Yes | Yes |
| 7 - | " " | 5 | No | No | No |
| 7 - | " " | 4 | Yes | No | No |
| 7 - | " " | 3 | No | Yes | No |
| 7 - | " " | 2 | Yes | No | No |
| 7 - | " " | 1 | Yes | Yes | No |
| 6 - | " " | 5 | Yes | Yes | Yes |
| 6 - | " " | 4 | Yes | No | No |
| 6 - | " " | 3 | No | Yes | Yes |
| 6 - | " " | 2 | Yes | No | No |
| 6 - | " " | 1 | Yes | No | No |
| 5 - | " " | 4 | Yes | Yes | Yes |
| 5 - | " " | 3 | No | No | Yes |
| 5 - | " " | 2 | No | Yes | Yes |
| 5 - | " " | 1 | Yes | No | No |
| 4 - | " " | 3 | Yes | No | No |
| 4 - | " " | 2 | Yes | No | No |
| 4 - | " " | 1 | No | No | No |
| 3 - | " " | 2 | No | No | Yes |
| 3 - | " " | 1 | Yes | No | Yes |
| 2 - | " " | 1 | No | No | No |

* "Yes" indicates the difference between the group is significant at or beyond the .10 level.

## Description of the Seven Groups.

Groups 1 and 4 (Figure 3) present a rather similar pattern in that they showed high scores on the conduct problem dimension, are close to the mean for the sample on the personality problem dimension, and are in the low range, albeit in different directions, on the inadequate-immature factor. In fact, when the Scheffe Test is used they do not differ on any dimension. Thus, unless discrepancies emerge between the two groups on the prediction from factors to criteria variables, the Q-analysis method might be too refined in such cases and Groups 1 and 4 could be treated under a single heading. Quay's term of conduct disorder seems appropriate for these groups since different patterns do not emerge between the groups. However, since two groups did appear in Q-analysis, we may for the moment refer conveniently to Group 1 as Conduct-Disorder I, and Group 4 as Conduct-Disorder II.

Group 2 has a unique patterning in that it shows low scores on each dimension; it seems to display a mixture of behaviors without displaying extreme or even moderately high scores on any one dimension. Group 2 will be referred to as a Mixed Symptom Group.

Group 3 also appears to be a unique group. It is different from some other groups (e.g. 1 and 4) on the conduct problem dimension, different from 6 and 7 on the personality problem dimension, and shows the most extreme score of any group on the inadequate-immature dimension. Group 3 will be characterized as the Inadequate-Immature Group.

Group 5 is also a unique group in that it is just about at the mean for all Ss on the conduct problem dimension but shows extreme lows on the personality problem and inadequate-immature dimensions. While Ss for this study were selected on the basis of their presumed problem behavior, this group's behavior according to this checklist showed the least amount of problems. In view of the plot yielded by Group 5 on the 3 R factors it may be characterized for the present as Inverse Personality Problem - Inadequate-Immature.

Groups 7 and 6 do not differ from each other but do differ from other groups on a number of the dimensions. For example, Group 7 shows an extremely low score, the lowest score for any group on the conduct problem dimension and differs significantly from Group 1, 2, 4 and 5 on this dimension. Group 7 then shows the highest score of any group on the personality problem dimension and differs from Group 1, 3, and 5. Seven also has a relatively high score on the inadequate-immature dimension, being only lower than Group 3 on the dimension and significantly different than 5 (Groups 7 and 5 differ on each of the 3 R factors). Group 7 shows extreme variability among the problem dimensions and can be labelled as a Personality Problem Group with overtones of Inadequate-Immature (P.P. - Sub. I.I.). Six, on the other hand, follows the same type of profile but shows less extreme deviation from the mean and can be labelled as more of a Personality Problem - Mixed Type.

Groupings as Predictors

The preliminary part of the analysis showed that the checklist and Q-technique would differentiate among groups of youngsters

presenting school problems. The next step in the analysis was to determine if the seven groups could also be meaningfully differentiated amongst themselves on the basis of academic characteristics such as reading, whether these groups differed from normals, and whether academic and/or intellectual retardation, if any, was more pronounced in some groups than others.

To simplify data analysis and interpretation all grade scores and mental age scores were converted to age-score equivalents using the norms of the California Reading and Intelligence Tests. This conversion was affected through the use of Table 19 in the manual for the California Reading Tests entitled "Actual Grade Placements and Corresponding Grade Chronological Ages for Determining Intellectual Status Index." This table gives the average chronological age for a child in a certain grade level, which is calibrated in divisions of a tenth of a grade.

The WISC Mazes (1949) has a table for converting scores into chronological age. For the Bender-Gestalt Test, Table 6 of the Koppitz Manual (1964) that contained developmental normative data was used. This was interpolated where needed, and extended at the beginning and ends of the scale. Since no norms have been published for the Intersensory Integration Test developed by Birch and Belmont (1964) the data from a directly relevant publication (Birch and Belmont, 1965) were used to obtain approximate age norms. The expectancy level was cut down by 20%, since the average IQ in his population was 40% above the traditional IQ average. Here also, extensions and interpolations were performed by the straightline method.

For the Benton Test of Visual Retention (1955), the table from the Manual was used to get chronological age scores and the theoretical expectancy on the test of visual retention.

It is apparent that the age scores obtained for the Birch Intersensory Integration Test, the Bender-Gestalt, and the Benton Visual Retention Test are only approximations; they are probably quite inadequate, but they were the best obtainable. Language age scores on the ITPA were taken from the test manual (1961).

Table 4 gives group means, and F values are given for the indicated variables converted to age equivalencies, and Scheffe results where appropriate.

Table 4

Table of Differences Among Groups on Academic and Intellectual Variabless

| | Mean | F | Scheffe |
|---|---|---|---|
| PPVT MA | | | |
| 1 | 107.71 | 5.86 | 7 > 6,2 |
| 2 | 92.43 | | |
| 3 | 97.64 | | |
| 4 | 103.90 | | |
| 5 | 117.91 | | |
| 6 | 95.33 | | |
| 7 | 121.36 | | |
| Spache, Word Recognition | | | |
| 1 | 106.30 | | |
| 2 | 92.81 | 3.20 | 5,7 > 2 |
| 3 | 106.64 | | |
| 4 | 106.00 | | |
| 5 | 120.54 | | |
| 6 | 104.60 | | |
| 7 | 118.00 | | |
| Spache, Language Comp. | | | |
| 1 | 116.77 | | |
| 2 | 108.62 | 1.61* | |
| 3 | 112.21 | | |
| 4 | 117.50 | | |
| 5 | 121.45 | | |
| 6 | 112.53 | | |
| 7 | 119.18 | | |

*not significant

+ df = 6,100; F for p = .05 is 2.19, and for p = .01 is 2.99.

| H. | $\bar{x}$ | F | t |
|---|---|---|---|
| Calif. Ment. Maturity | Total IQ | | |
| 1. | 105.93 | 3.49 | 7,1 > 2 |
| 2. | 86.37 | | 7 > 6 |
| 3. | 93.69 | | |
| 4. | 95.64 | | |
| 5. | 103.80 | | |
| 6. | 90.60 | | |
| 7. | 113.18 | | |
| Calif. Lang. IQ. | | | |
| 1. | 107.93 | | |
| 2. | 88.81 | | |
| 3. | 94.92 | 2.78 | 7 > 2,6 |
| 4. | 93.68 | | |
| 5. | 102.70 | | |
| 6. | 89.20 | | |
| 7. | 114.00 | | |
| Calif. Non-Lang. IQ. | | | |
| 1. | 108.14 | | |
| 2. | 89.68 | 3.03 | 7,5 > 2 |
| 3. | 98.46 | | |
| 4. | 100.27 | | |
| 5. | 108.80 | | |
| 6. | 99.53 | | |
| 7. | 115.27 | | |
| Calif. Numerical Reas. | | | |
| 1. | 51.71 | 2.82 | 1 > 5,7,3,6,2 |
| 2. | 34.68 | | |
| 3. | 38.57 | | |
| 4. | 43.81 | | |
| 5. | 41.09 | | |
| 6. | 37.33 | | |
| 7. | 39.90 | | |

| | $\bar{x}$ | F | Scheffe |
|---|---|---|---|
| **Chronological Age** | | | |
| 1. | 115.93 | | |
| 2. | 113.92 | 2.04* | not significant |
| 3. | 114.35 | | |
| 4. | 112.86 | | |
| 5. | 129.45 | | |
| 6. | 127.33 | | |
| 7. | 121.09 | | |
| **Calif. Read. Voc.** | | | |
| 1. | 101.00 | | |
| 2. | 89.00 | 3.97 | 7,5 > 2 |
| 3. | 100.14 | | |
| 4. | 93.14 | | |
| 5. | 114.70 | | |
| 6. | 101.80 | | |
| 7. | 115.10 | | |
| **Calif. Read. Compr.** | | | |
| 1. | 97.25 | | |
| 2. | 84.12 | | |
| 3. | 96.85 | 5.53 | 7,5 2 |
| 4. | 89.82 | | |
| 5. | 110.72 | | |
| 6. | 99.20 | | |
| 7. | 107.90 | | |
| **Calif. Tot. Read.** | | | |
| 1. | 100.00 | | |
| 2. | 87.44 | 4.14 | 7,5 > 2 |
| 3. | 99.29 | | |
| 4. | 94.22 | | |
| 5. | 110.72 | | |
| 6. | 100.60 | | |
| 7. | 112.45 | | |

To examine the question of whether disturbed Ss were retarded in reading the MA (PPVT) converted to language age was used as an expectancy level. Reading retardation was operationally defined as Mental Age minus Reading Age (Harris, 1964) and the California Reading Test Total Age was compared with this expectancy.

Table 5

Comparison of Groups on Mental Age vs. Reading Age

| Q group | N | F | P |
|---|---|---|---|
| 1 | 14 | <1 | |
| 2 | 16 | <1 | |
| 3 | 15 | <1 | |
| 4 | 22 | 2.425 | |
| 5 | 11 | <1 | |
| 6 | 15 | 6.20. | RA>MA @ .01 level |
| 7 | 11 | <1 | |

The above table demonstrates that these behaviorally disordered Ss were not in fact retarded in reading when Mental Age was taken into account. When CA and MA were compared the following results were uncovered:

Table 6

Comparison of Groups on Chronological Age vs. Mental Age

CA vs. MA

| Q group | F | P |
|---|---|---|
| 1 | <1 | |
| 2 | 8.78 | <.01 |
| 3 | 8.73 | <.05 |
| 4 | 1.81 | |
| 5 | 1.23 | |
| 6 | 19.39 | <.01 |
| 7 | <1 | |

The analysis of variance for MA (Mental Age) vs. Reading Age is shown in Table 5.

To answer the question of whether Ss were retarded in reading relative to CA the data were analyzed to see if CA was greater than RA. The following results were obtained:

Table 7

Comparison of Groups on Chronological Age vs. Reading Age

| Group | F | P |
|---|---|---|
| 1 | 6.12 | .05 |
| 2 | 7.73 | .05 |
| 3 | 4.08 | N.S. |
| 4 | 21.10 | .01 |
| 5 | 4.05 | N.S. |
| 6 | 10.98 | .01 |
| 7 | 1.15 | N.S. |

Thus it can be seen that the Groups 3, 5, and 7 were reading at a level commensurate with their chronological age. Group 5 and 7 also scored highest on most of the intellectual and achievement tests. In addition, it was apparent that each group was achieving at least commensurate with its mental age or expectancy while one group, Q6, or Personality-Problem, Mixed Type, could be defined as overachieving. It appears that given a normal IQ, the higher the score on the conduct disorder dimension the more retarded is reading relative to chronological age.

Since expectancy can be defined in a number of ways and other researchers might wish to analyze the data differently Appendix B is included to show different means and how the different groups related to ITPA Language Mean, California Verbal and Non-Verbal IQ, etc.

The complete test data were also analyzed by a treatment by subjects design (Lindquist, 1953, p. 156) in order to eliminate inter-subject differences as a source of error. PPVT MA was used as a mean of 0 and a matrix was composed which showed deviations from the baseline on the variables of the ITPA and reading tests. The list of variables are shown in Table 8.

Table 8

Table of Symbols for Tester Used in Treatment by Subjects Analysis

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Auditory-Vocal Automatic (ITPA) A.V. Auto | Visual Decoding (ITPA) V.D. | Motor Encoding (ITPA) M.E. | Auditory Vocal Assn. A.V. Assoc. | Visual Motor Seq. (ITPA) V.M.S. | Vocal Encoding (ITPA) V.E. | Aud. Vocal Seq.(ITPA) A.V.Seq. |

| 8 | 9 | 10 | 11 | 12 | 13 | |
|---|---|---|---|---|---|---|
| Visual Motor Assn. (ITPA) V.M. Assoc. | Aud. Decoding (ITPA) A.D. | Spache Word Recognition (S.W.R.) | Spache Listening Compr. (S.L.C.) | Calif. Reading Test Vocal C.R.V. | Calif. Reading Test Compr. C.R.C. | Calif Reading Test Total C.R.T. |

Following the analysis of variance the Tukey test (Edwards, 1960) was used to study which differences between tests were significant. The

following tables show these analyses:

Table 9

Treatment by Subjects Analysis of Within-Group Achievement for Q1 on ITPA and Reading Variables

Q1 ( N=9)

| Source | N | $\Sigma^2$ | S | F |
|---|---|---|---|---|
| S | 8 | 95068 | 11883.50 | 37.6 |
| A | 13 | 11567 | 889.76 | |
| AXS | 104 | 32937 | 316.70 | |
| T | 125 | 139572 | | |

The Tukey at the .05 yielded the following data:

| S.L.C. | S.W.R. | A.D. | V.E. | M.E. | A.V.Seq. | C.R.V. |
|---|---|---|---|---|---|---|
| 9.55 | 4.22 | -4.88 | -5.33 | -8 | -9.44 | -9.77 |

| C.R.T. | A.V.Auto. | C.R.C. | V.M.Assoc. | V.D. | A.V.Assoc. | V.M.S. |
|---|---|---|---|---|---|---|
| -10.33 | -10.66 | -12.11 | -13.11 | 14.11 | -15.33 | -31.22 |

t= 17.49 for a significant gap and it was discovered that there were significant differences between scores on the Spache Listening Comprehension and other variables and Spache Word Recognition and other variables.

L.C.> M.E., A.V.Seq., C.R.V., C.R.T., A.V.Auto, C.R.C., V.A.Assoc., U.D.,A.V.Assoc. V.M.Seq., W.R.> V.D., A.V. Assoc., V.M.S.

Table 10

Treatment by Subjects Analysis of Within-Group Achievement for Q2 on ITPA and Reading Variables

Q2 ( N=8)

| Source | N | df | $\Sigma^2$ | MS | F |
|---|---|---|---|---|---|
| A | (a-1) | 13 | 11,938 | 918 | |
| S | (s-1) | 7 | 24,651 | 3522 | |
| AXS | (a-1) (s-1) | 91 | 18,940 | 208 | 441 |
| T | N-as | 111 | 55,529 | | |

| M.E. | S.L.C. | S.W.R. | V.M.Assoc. | V.D. | C.R.C. | V.M.Assoc. |
|---|---|---|---|---|---|---|
| 15.13 | 13.25 | 1.50 | 1.12 | .62 | -5.37 | -5.38 |

| C.R.T. | C.R.C. | V.E. | A.V. Assoc. | A.V.Seq. | A.V.Auto. | V.M.S. |
|---|---|---|---|---|---|---|
| -6.87 | -8.75 | -9 | -11.62 | -12.38 | -16 | -24.75 |

With t. 05 a significant gap was 14.20 and the Tukey yielded the following data:

M.E. > V.D., C.R.V., V.M.Assoc.,C.R.T.,V.E., A.V.Assoc., A.V.Seq., A.V.Auto, V.M.S.

S.L.C. > C.R.V., V.M.Assoc., C.R.C., V.E., A.V.Assoc., A.V. Seq., A.V. Auto, V.M.S.

S.W.R. > A.V.Auto, V.M.S.

Table 11

Treatment by Subjects Analysis of Within-Group Achievement from Q3 on ITPA and Reading Variables

| Source | df | $\Sigma / ^2$ | S | F |
|---|---|---|---|---|
| A | 13 | 18,416 | 1417 | 15.40 |
| S | .7 | 49,689 | 7098 | |
| AS | 91 | 8,342 | 92 | |
| Total | 111 | 76,447 | | |

With t .05 equalling 9.46 for a significant gap the Tukey yielded the following data:

N = 8

| S.L.C. | S.W.R. | A.D. | C.R.V. | C.R.T. | C.R.C. | V.M.Assoc. |
|---|---|---|---|---|---|---|
| 12.12 | 5.37 | -1.87 | -2.62 | -3.75 | -7.37 | -9.0 |

| M.E. | V.D. | A.V.Seq. | A.V.Assoc. | A.V.Auto | V.E. | V.M.S. |
|---|---|---|---|---|---|---|
| -10.25 | -11.0 | -12.12 | -14.62 | -23.75 | -24.5 | -41.37 |

S.L.C. > A.D., C.R.V., C.R.T., C.R.C., V.M.Assoc., M.E., V.D., A.V.Assoc., A.V.Auto, V.E., V.M.S.

S.W.R. > G.R.C., V.M.Assoc., M.E., V.D., A.V.Seq., A.V.Assoc., A.V.Auto, V.E., V.M.S.

D.E. < A.V.Seq., V.D., M.E., V.M.Assoc., G.R.C., C.R.T., C.R.V., A.D., S.W.R., S.L.C.

V.M.S. < All

A.V.Auto < A.V. Seq., V.M. Assoc., A.D., S.W.R., S.L.C., C.R.V., C.R.C., C.R.T.

Table 12

Treatment by Subjects Analysis of Within-Group Achievement for Q4 on ITPA and Reading Variables

| Source | df | SS | MS | F |
|---|---|---|---|---|
| A | 13 | 15,210 | 1170 | |
| S | 12 | 42,329 | 3527 | 5.11 |
| AS | 156 | 35,663 | 229 | |
| TOTAL | 209 | 93,202 | | |

N = 13

| S.L.C. | V.D. | S.W.R. | M.E. | A.D. | V.M.Assoc. | C.R.V. |
|---|---|---|---|---|---|---|
| 16.75 | 9.15 | 4.83 | 4.61 | .69 | -3.46 | -3.58 |

| A.V.Seq. | C.R.T. | V.E. | A.V.Assoc. | C.R.C. | A.V.Auto | V.M.S. |
|---|---|---|---|---|---|---|
| -4.0 | -4.75 | -7.0 | -7.69 | -8.75 | -12.53 | -22.92 |

S.L.C., S.W.R., M.E., A.D., V.M.Assoc., C.R.V., A.V.Seq., C.R.T., V.E., A.V.Assoc., C.R.C., A.V. Auto, V.M.S.

V.D.> V.M. Assoc., C.R.C., A.V.Seq., C.R.T., V.E., A.V.Assoc., C.R.C.,A.V.Auto,V.M.S.

S.W.R.> V.E., A.V. Assoc., A.V.Auto, V.M.S.

Table 13

Treatment by Subjects Analysis of Within-Group Achievement for Q5 on ITPA and Reading Variables

| Source | df | $\sum X^2$ | Ms | F |
|---|---|---|---|---|
| A | 13 | 12,688 | 976 | |
| S | 6 | 66,816 | 11,136 | |
| AS | 78 | 10,641 | 136 | 7.18 |
| TOTAL | 97 | 90,145 | | |

A t of 12.35 was needed to achieve a significant gap between groups. The Tukey yielded the following data:

N = 7

| | | | | | | |
|---|---|---|---|---|---|---|
| S.W.R. | S.L.C. | C.R.V. | C.R.C. | M.E. | V.E. | C.R.T. |
| + 9.43 | + 1.00 | + .71 | -4.86 | -7.14 | -9.57 | -13. |
| A.D. | V.M.Assoc. | V.D. | A.V.Assoc. | A.V.Auto. | V.M.S. | A.V. Seq. |
| -15.14 | -16.28 | -17.42 | -20 | -22 | | -29.57 |

S.W.R. > C.R.C., M.E., V.E., C.R.T., A.D., V.M.Assoc., V.D., A.V. Assoc., A.V.Auto, V.M. Seq., A.V. Seq.

S.L.C. > A.D., V.M. Assoc., A.V. Assoc., A.V. Auto, V.M.S. V.D.

C.R.V. > A.D., V.M. Assoc., A.V. Assoc., A.V. Auto, V.M.S.

V.M.S. > V.E., M.E., C.R.C., C.R.V., S.L.C., S.W.R.

Table 14

Treatment by Subjects Analysis of Within-Group Achievement for Q6 on ITPA and Reading Variables

| Source | df | SS | MS | F |
|---|---|---|---|---|
| A | 13 | 10,101 | 777 | |
| S | 7 | 42,182 | 6026 | |
| AxS | 91 | 24,286 | 267 | 2.91 |
| TOTAL | 111 | 76,569 | | |

A t of 16.10 was needed to achieve a significant gap between means on the Tukey.

The following data were yielded:

| S.L.C. | C.R.T. | S.W.R. | V.D. | C.R.V. | C.R.C. | V.M.Assoc. |
|---|---|---|---|---|---|---|
| 14.50 | 8.37 | 8 | 6.87 | 5.37 | 2.75 | 2.37 |

| A.D. & M.E. | A.V.Seq. | V.M.S. | A.V.Assoc. | V.E. | A.V. Auto |
|---|---|---|---|---|---|
| 1.0 | -8 | -8.37 | -10.57 | -12.62 | -20.62 |

S.L.C. > A.V. Seq., V.M.S., A.V. Assoc., V.E., A.V. Auto.

C.R.T. > A.V. Seq., V.M.S., A.V. Assoc., V.E., A.V. Auto.

S.W.R. > V.M.S., A.V. Assoc., V.E., A.V. Auto.

V.D. > A.V. Assoc., V.E., A.V. Auto.

C.R.V. > A.V. Assoc., V.E., A.V. Auto.

C.R.C. > A.V. Auto.

V.M. Assoc. > A.V. Auto.

A.D. > A.V. Assoc.

Table 15

Treatment by Subjects Analysis of Within-Group Achievement for Q7 on ITPA and Reading Variables

| Source | df | SS | MS | |
|---|---|---|---|---|
| A | 13 | 376 | 28.92 | |
| S | 7 | 44,167 | | f= N.S. |
| AxS | 91 | 4,355 | 47.86 | |
| T | 111 | 48,898 | | |

The above results show that except for Group 7, a group that was achieving commensurate with its age and mental expectancies, each group showed significant within-group discrepancies between aspects of language -- e.g. reading and ITPA subtests.

The previous analyses were essentially concerned with grouping, achievement, and within-group differences. This investigation was also concerned about comparing the different subgroups of the population under investigation between themselves and, further, to discover if and how each group differed from theoretical expectancy.

A proportionate number of Ss from each of the seven groups was individually tested by a trained examiner on a psychological battery of tests. The probability value of .05 (two-tailed) was set as the significance level between groups.

The following table shows the means, F values, and t tests where appropriate for the battery of tests between groups, and comprised the reading model.

Table 16

Analysis of Variance between Q Groups on Theoretical Model of Reading

N=65

| | | F | P | t |
|---|---|---|---|---|
| ITPA | Auditory Vocal Automatic | 1.30 | | |
| ITPA | Visual Decoding | .82 | | |
| ITPA | Motor Encoding | 1.025xxx | | |
| ITPA | Auditory-Vocal Association | 3.02 | .01 | 7,5>2 |
| ITPA | Visual-Motor Sequencing | 1.95 | | |
| ITPA | Vocal Encoding | 1.07 | | |
| ITPA | Auditory-Vocal Sequencing | .403 | | |
| ITPA | Visual-Motor Sequencing | .776 | | |
| ITPA | Auditory Decoding | .296 | | |
| ITPA | Total | 1.086 | | |
| Monroe | | .407 | | |
| Kass Visual Closure | | 1.183 | | |
| Birch | | 1.93 | | |
| Wepman X | | 1.05 | | |
| Wepman Y | | .076 | | |
| Benton Correct | | .358 | | |
| Benton Error | | .635 | | |
| | | .624 | | |
| Mazes | | .507 | | |

d.f. 6,64

These groups were differentiated only on the basis of the Auditory-Vocal Association Tests.

The next step in the data analysis was to compare each group's actual achievement with its expected achievement on the ITPA model. Following Kass' design, $\underline{z} = \bar{x} - \sqrt{n}$ was used and the probability value for each $\underline{z}$ was noted. It had originally been planned to assess the expectancy of tests like the Kass, Bender, Birch and Benton, but since those norms are used primarily for guidelines and those tests are not yet fully standardized it was decided that any results could well be spurious and an artifact of methodology rather than real strengths or weaknesses within the group. The Silver and Hagin Extension Test and the Harris Test of Laterality were dropped from the battery because the reliability between judges was so low that youngsters could not be meaningfully categorized. The Monroe Test was also dropped when it was found that one of the examiners systematically introduced a bias in the test by spacing the vowels too far apart.

The following table shows the probability level for the $\underline{z}$ scores for each of the ITPA subtests and the raw scores of the Mazes Scaled Score WISC.

Table 17

Probability Levels for Z Scores of Q Groups Indicating Strengths and Weaknesses on Reading Model

| | Strengths | | | Weaknesses | | | |
|---|---|---|---|---|---|---|---|
| | M.E. | V.E. | V.M.S. | A.V.Auto. | A.V.Assoc. | V.D. | A.V. Seq.Mazes |
| Q1 | | | .001 | .02 | | | |
| Q2 | .07 | .001 | .001 | .01 | .01 | | .01 |
| Q3 | | | .001 | .001 | | .07 | |
| Q4 | | | .01 | .05 | .05 | | .01 |
| Q5 | .09 | | .07 | | | | |
| Q6 | | | | .02 | .05 | .07 | .01 |
| Q7 | .07 | | .05 | | | | |

The results demonstrate that the relative strengths of this group compared to normals are in the encoding areas. Strengths must be interpreted with caution since some of the Ss used in this study were above the age level for the

norms of the test.

While the ITPA limits only go up to 9 this test can be used according to the manual to uncover deficits in older children, so that with other Ss relative strength may not be uncovered but deficits are. In addition, the test also correlates positively with social class. Perhaps the low social class of Ss worked to prevent Ss from going over the ceiling on this test. Previous research (Graubard 1965) found that low SES emotionally handicapped Ss who were above the CA of the test ceiling did not, except in isolated subtests, go above the norm of the ITPA.

An obvious area of weakness for almost the entire sample was Visual Motor Sequencing and Auditory-Vocal Automatic. Certain groups had difficulty with the Auditory-Vocal Association (it appears that these groups were also inferior in IQ to other groups) and Mazes. Two of the three groups that had difficulty in this latter area also scored highest on the conduct disorder dimension of the checklist.

In summary, Ss were sorted into Q groups. Each Q group was measured on a number of variables. The analysis of variance was used to assess differences between groups. Consistent differences emerged showing Groups 7 and 5 to be superior to Group 2 and often to Group 6. Differences between other groups were not significant. On a model of reading there were virtually no significant differences between groups. When compared to normals, relative strengths emerged in the Encoding Area and deficits appeared in the area of Auditory-Vocal Automatic, and Visual-Motor Sequencing.

## DISCUSSION

This investigation was concerned with examining the efficacy of the Behavior Problem Checklist, ascertaining whether disturbed Ss are retarded in reading relative to CA and MA and whether there were differences between subgroups of disturbed Ss and between disturbed Ss and normals on such variables as reading level, IQ, and other psychometric characteristics.

From the data it appears that there are meaningful clusters within the term "emotionally disturbed" and that there are some educationally relevant variables associated with behavior clusters. For example:

One group, Q6, or the Personality Problem-Mixed Type, is in fact an overachieving group relative to Mental Age. This group was extremely low on the dimension of aggression, and rather "pure" as to characteristics such as "aloofness," "shyness," "self-consciousness," "easily flustered," and "confused." It appears that this group is very eager to please their teachers, and to avoid ridicule or "being hollered at." It appears that they are quite "successful" academically, although it must be remembered that Group 6 has an MA significantly lower than its CA.

As another example, Groups 5 and 7 are generally functioning well vis-a-vis reading achievement. Group 5 is not above the mean on any dimension. Interestingly Group 7 has the highest score on personality

problems, and a very high score on the inadequate-immaturity dimension, but the lowest score of all groups on the aggressive dimension. While several groups have lower scores than Q7 on personality problems and inadequacy-immaturity it appears that when their scores are coupled with scores above the mean on aggression, the group does relatively less well on IQ and/or reading tasks. Thus, there appears to be an inverse relationship between aggressive behavior or conduct disorders and academic achievement.

Not only are there academically relevant behaviors associated with Q groups but meaningful differences also emerged between some groups. Thus Groups 5 and 7 are often superior to Group 2 and 6. Group 6 in fact could be considered a retarded group. although none of the Ss were in special classes for retarded children. Ss in Q6 were considered quite disturbed by their teachers but their highest z score was in the dimension of personality problem with traits like "anxiety," "chronic general fearfulness," "depression," and "chronic sadness" checked off. It appears as if this group was working as well as, if not better than, one would expect, but these Ss are now in competitive situations and such situations may well exacerbate traits like "fearfulness" and "depression."

Group 2, on the other hand, was composed of young Ss not quite as differentiated or "pure" as in Q6. It was a group with relatively low IQs (M=86.38, SD=11.24), and mostly consisted of special-class day school pupils. This group did not show an extreme score on any dimension

but rather showed an assortment of many traits, some of them almost contradictory, so that they scored above the mean for all Ss on both aggressive and personality problems and very close to the mean in immaturity. This was in sharp contrast to the groups (5 and 7) which were superior to them, in that 5 and 7 were more consistent in their behavior. Groups 2 and 6 differ both from each other and from Groups 5 and 7. (Group 2 seemed to be lowest on many scores even though their IQ was higher than that of Q6. The fact that 2 was higher on aggression than 6 seems to account for this difference.)

Certain "learning" patterns did emerge within groups for selected groups. Thus, the treatment by subjects analysis demonstrated differences between groups for the acquisition of ITPA, reading and IQ skills. While all groups might eventually pick up the same skills, perhaps they acquire skills in a different order. Thus, the sequencing for teaching skills to some of the groups could be different. The data from this study certainly point to that possibility. Moreover, within certain important limits (such as heterogeneity for the sake of seeing different behavior modelled), specialized curricula could be developed for each group. As an example, Group 7 showed a deficit only in Visual Motor Sequencing. Quay et al (1966) and Hewett (1967) demonstrated that it is possible to condition visual orientation. While Group 7 did not appear to have a particular memory deficit as evidenced by IQ and achievement scores, they do show a problem in attentiveness. A curriculum can be directly geared to this deficit.

As another example Q6 appears to be decidedly deficient in Auditory Vocal Automatic, Auditory Vocal Association, and Auditory Vocal Sequencing as well as in planning ability as evidenced by the WISC Mazes. In short, this group was greatly deficient in verbal skills and a large number of Ss could be classified as retarded. Thus, curricula for the group should develop the verbal abilities of the group and enable these Ss to express themselves in a more appropriate manner.

Q2 also presents a distinct pattern in that Motor Encoding was their highest strength area and their IQ was quite low, as were Visual Motor Sequencing and Auditory Vocal Automatic. It appears as if the group can take in verbal communication, and curricula for Q2 should work on the development of the Sequencing area and Auditory Vocal Automatic.

Q1, an aggressive group, also showed weaknesses in areas that called for delay of impulses and for visual and motor attention to detail. Thus this group, too, could benefit from the conditioning procedures developed by Quay and Hewett.

On the other hand, the differences between groups, while apparent, were not striking. After the differences in achievement were uncovered between groups the next step in the analysis was to examine the data between the groups to see if there were any differences on psychological tests which presumably influence Ss in their manner of acquiring symbolic knowledge as well as in terms of ability. Analysis of variance on various measures showed significant differences for only one test, the Auditory-Vocal Association subtest of the ITPA, where Groups 5 and 7 were superior

to Group 2. However, the correlation between this test and MA have been found to be so high (Kirk and McCarthy, 1961) that differences between these groups can be attributed to MA alone.

In summary, it appears that the groups do differ to some extent with respect to IQ and associated factors, but there are no other differences between groups in terms of psychometric characteristics. Differences in IQ that emerged seem to indicate that Ss who show aggressive coupled with personality problem traits perform poorly (Group 2), as do low IQ children (Group 6).

Therefore, with regard to psychometric characteristics one would conclude that disturbed children are essentially not delineable in terms of the traits assessed by the Quay checklist, with the exception of some IQ differences. This does not imply homogeneity of disturbed children across such characteristics; rather the children are quite variable with respect to these measures and such variability is shared from group to group.

Using the Quay scale and Cohen's Q-analysis it appears as if the more aggressive children were retarded in reading relative to chronological age. However, no groups were retarded in reading relative to mental age. Groups 1 and 4 follow the same general pattern except that Group 4 seems to display a good deal of immaturity as well as aggression whereas Group 1 appears to display more of an aggressive delinquent pattern. Interestingly, Group 1 was significantly higher on Numerical Reasoning than any other group except Group 4, its behavioral "peer".

The data showing that differences between groups were minimal also answer, in part at least, the question of how great the consonance is between behavioral characteristics (e.g. boisterousness, aloofness) and learning characteristics (e.g. ITPA profile). The similarity between groups argues against grossly differential curricula, although, again, the sequencing might be different for different groups. Further, it appears from the data of this study that because of the minimal differences between groups, the overlap between behavioral characteristics and learning characteristics is not great. Differences are reflected primarily in gross areas like IQ and reading rather than in terms of possibly more refined factors which could influence learning.

When compared with normals, however, the disturbed groups showed distinctive differences (See Table 7 and 17 and Appendix B). When the data on different Q groups were examined for inter-group differences and for deficits in different areas relative to normals, great heterogeneity appeared between the disturbed groups, except in two areas. In Visual Motor Sequencing (VMS) and Auditory Vocal Automatic (AVA) the disturbed groups were quite homogeneous in deficits, and were in striking contrast to the normative group. The VMS test purports to measure attention to task and visual memory and perception, while AVA is ostensibly a grammar completion and closure task which measures overlearned material.

It is not clear to this writer just why these tests discriminated these disturbed Ss so clearly and cut across IQ, reading levels, and types of behavior. Graubard (1965) had found that aggressive children showed this type of learning deficit and related it to a distorted time sense and

lack of impulse control, but it was not hypothesized that Inadequate-Immature Ss and Personality Problem Ss would also show this kind of learning pattern. It will be interesting to see if these findings are repeated in other studies with the less aggressive children.

As was stated before, most of the groups had difficulty with the Auditory Vocal Automatic ITPA subtest and this investigator was particularly concerned with the fact that many Ss did poorest on this test. The significance of this test should not be overlooked, for it had the highest correlation with reading. This correlation is shown in Table 18.

Table 18

Pearson product moment correlation between Auditory Vocal Automatic (ITPA) and Reading Measures.
N=54

| | Spache W.R. (.01) | Spache L.C. (.01) | Cal. Read. V. (.01) | Cal. R. Comp. (.01) |
|---|---|---|---|---|
| Auditory-Vocal Automatic | .8040 | .4965 | .6936 | .6430 |

In addition Deutsch (1964) has observed that students become aware of poor grammar and syntax and their language then becomes intra-class contained. Moreover, Bernstein (1962) has uncovered a great deal of evidence that difficulties with syntax and the structure of language turn those with these difficulties to the use of a "restricted code," and its users then focus on interpersonal communication rather than more cognitive means of communication.

When compared with normals in academic achievement per se disturbed Ss did show retardation in certain areas and not in others. Only Groups 1 and 4 were retarded in reading relative to CA, and no group was retarded in reading relative to MA. Thus, most Ss were not retarded in reading. This finding is significant because of the widespread belief that disturbed Ss are generally quite retarded in reading.

For example: Morse et al (1964) have noted "It is a matter of common clinical observation that many such children (disturbed) are academically retarded." Certainly, prevailing sentiment among clinicians and educators is that, as a group, disturbed Ss are retarded in academics. The teacher's perception of Ss surveyed in the Morse study was that "academic retardation was an important accompaniment of emotional handicap in a majority of the children observed (1964, p.24)." Morse also stated: "Site visitor's observations indicated that remedial efforts in this area constituted a large part of the classroom program."

Since the question of whether disturbed Ss as a group are academically retarded seems to be fundamental, the Morse study is worth examining closely. Morse used a quotient index to examine whether disturbed Ss were functioning below expectancy and then reported that most Ss were.

The quotient index reported by Morse was subjected to a $/^2$ analysis by this investigator to examine whether the 55% functioning below 100 were significantly greater than the 45% functioning above 100% or whether this discrepancy could be attributed to chance alone.

The $/^2$ follows:

$\underline{N} = 154$

| 77 | 77 |
|---|---|
| 84.7 | 69.3 |
| Below | Above |

$/^2 = 1.67$ n.s.

df = 1

Thus, statistical analysis revealed that no significant difference existed between those falling above expectancy and those below, and there was no contravening evidence to suggest that disturbed Ss as a group do not follow the normal curve.

Implications

In Morse's study only 21% of former teachers and 30% of the current teachers felt that Ss were not academically retarded, but in fact 45% of Ss were not retarded according to psychometric data. Statistical analysis does not support the statement that academic retardation was a major problem for the group. Of great interest and concern to this investigator were Morse's conclusions that "What would seem to be a central process in charting the child's progress was neglected in these programs. Teachers usually knew about the retardation and often felt that specific tests were not necessary or might have given misleading information."

One questions whether the teachers really "knew" or were their expectancies obscuring the real picture? Since the child is having behavior problems, it is assumed that he is therefore having all kinds of

other problems. It is important that this expectancy set be broken so that emotionally disturbed children can be seen as individuals with a range of behavior, and with some problems that are circumscribed, so that difficulty in one area does not necessarily spill over into another.

As Balow (1966) has stated, the belief in academic retardation is prevalent but the evidence is equivocal, and the better designed studies seem to indicate that, in fact, emotionally disturbed children as a group are not academically retarded if mental age is used as the expectancy criterion.

In one study, the writer (Graubard, 1964) found an institutionalized delinquent-disturbed sample almost three years below expectancy in reading where comprehension instead of word recognition was used as the criteria; but the sample was a group that had been institutionalized for a number of years. That study is open to further criticism on the grounds that mental age was used when many of the Ss were above CA 12, where mental age is not a very meaningful or useful concept. Shimota's (1964) otherwise excellent study is open to the same criticism, for only approximately one third of her sample was found to be disabled in reading when reading skill was defined as 25 percent or more below expectation based on age and IQ. As Balow pointed out, a fundamental difficulty in interpretation and comparison is that social class background, IQ distribution, and the nature and severity of emotional disturbance are not spelled out in most of these studies.

There is one other large scale study which must also be considered. Rabinovitch (1964) examined 500 Ss and concluded that approximately two-thirds of the boys and more than three-fourths of the girls were achieving according to expectancy, using the California Achievement Test as the criterion. Expectancy or adequate achievement was defined as achieving less than one year below CA for Ss 11 and younger, 2 years for Ss 11-1 and older. Rabinovitch reported that certain groups such as neurotic acting-out and primitive, neglected children had the highest percentage of underachievers, but the reliability of psychiatric diagnosis (especially for children) leaves these conclusions open to doubt.

We then see that this study and those by Morse et al. (1964) and Rabinovitch (1964) using the largest Ns and the most stringent criteria essentially demonstrate that emotionally disturbed children as a group do not display academic retardation. Perhaps Hobbs (1966), Morse (1964) and others have looked at Ss like those in Groups 1 and 4 (these Ss are certainly quite visible) and generalized from them.

Thus, the data from the current study showed that, regardless of category, disturbed Ss were not in fact significantly retarded in reading when mental age was taken into account. Two of the groups were reading significantly below CA, but CA is not always a sufficient baseline or expectancy rate. The withdrawn Ss read as well as expected. This finding weakens the psychoanalytic argument that reading is an "aggressive" act and that many disturbed children do not learn to read

because reading is equated with "peeking" and withdrawn children are afraid of the consequences of actively learning.

It can be argued that MA or expectancy is depressed by disturbance and therefore the expectancy is set too low or that reading tests and IQ tests test the same skill and therefore the correlation is high. In answer to the first argument, mental age is not being used in this study as an impenetrable ceiling which cannot be raised; rather it is being locked at as an important indicator of verbal skill which is highly related to the extent to which verbal comprehension can take place, since reading is not a skill in isolation but is part of language (Myklebust and Johnson, 1962). While it might be true that disturbed Ss "true" IQs might be higher, it can also be argued that currently it is a realistic although far from perfect expectancy rate. Also, the literature does not show real fluctuation in IQ after psychotherapy (LaVietes et al, 1966), which weakens the argument that there is a "true" IQ which is hidden by emotional disturbance. As to the argument that IQ and reading tests measure the same thing, there is some experimental evidence (Graubard, 1967) that the particular IQ test used, the PPVT, is not as good a predictor of academic success as instruments like the WISC or Binet, and Graubard found a nonsignificant correlation between the PPVT and a reading measure although children specifically retarded in reading were used as Ss. Thus it appears that high performance on the PPVT does not necessarily mean high performance on a reading measure, and the two measures can be independent although in most cases, as one would expect, the correlation between IQ and reading is about .60 or .70.

In conclusion to the question of whether Ss as a group are retarded in reading it appears that:

1) Disturbed Ss as a group are not retarded in reading.

2) The more aggressive groups are retarded in reading relative to CA.

3) Even the more aggressive groups are not retarded in reading relative to MA.

4) It must be remembered that there are general deficits insofar as reading is adequately predicted by MA deficits. We can now say which children are likely to show deficits.

In this study, as in Morse's, a majority of the teachers interviewed perceived the Ss to be achieving far below what psychometric instruments showed.

Implications of Data

1) The Rosenthal effect - Rosenthal and Jacobson (1968) have convincingly demonstrated that teachers can function as Pygmalions. They informed selected teachers that randomly assigned children had particular characteristics, e.g. gifted, retarded. Teachers were not told that matched Ss had the same characteristics. After a while the Ss took on the characteristics that had been ascribed to them by the teacher, so that the children who were supposed to be bright became bright, etc. Thus, they empirically demonstrated that children met the expectations, for better or worse, of significant adults. This phenomenon has often been clinically observed but never so systematically demonstrated. The perception of a teacher vis-a-vis the academic retardation of disturbed Ss may in fact become a self-fulfilling prophecy and in the long

run children might very well meet these subtle expectations.

2) Establishment of hierarchies for teacher training programs in the education of the emotionally disturbed. If emotionally disturbed children are not academically retarded as a group, perhaps less emphasis can be placed on remedial methods in teacher training programs and more emphasis on problems of management and motivation. Of course, this investigation is concerned with averages, and it must be remembered that many individual Ss did show significant academic retardation requiring specifically geared remedial instruction rather than general developmental reading lessons. This investigator is saying only that in a limited teaching period certain choices and priorities have to be made in terms of content covered. Certainly remedial methods are an important part of the repertoire of all teachers, but the evidence of this study indicates that teachers of the emotionally handicapped will find on the average about as much academic retardation for the children they service as will regular classroom teachers. If the special education teacher is primarily to service academically retarded children, he must master remedial methods. However, contrary to prevailing opinion, the special education teacher, at least for students ages eight through ten, will primarily service children who are not remedial reading cases. Therefore teacher education programs need not prepare remedial specialists in this area on the assumption that they will primarily service academically retarded students.

3) Emotional disturbances as the predictor variable. While it appears that emotionally disturbed children as a group are not achieving below expectancy, there is empirical evidence that a large number of disturbed children are functioning below expectancy, and there is clinical evidence that many disturbed children have had their emotional problems exacerbated by poor achievement in school. All of the investigations discussed have been essentially correlative in nature, and cause-and-effect inferences from such data are speculative at best. As Bateman (1966) points out in her review:

> "Important questions deal with the efficacy of remedial methods and treatment procedures as a function of particular disabilities and in the study of the predictive value of emotional problems in the development of programs to prevent learning problems. While much work in the prediction of potential learning problems is still in progress and unpublished, no major or serious efforts, to the reviewer's knowledge, are under way to use emotional disturbance as a predictor variable." (Page 103.)

The importance of this must be underscored, for the development of a science of pedagogy is dependent upon the ability first to predict and then to change. The exacerbation of emotional disturbance by learning problems and vice versa make it imperative to follow groups longitudinally. Lane and Albee (1966), using a retrospective design, found that adult schizophrenics, when compared to their own siblings as controls, had begun in elementary school to manifest difficulties in intellectual functioning. Obviously not all children who have difficulty in school become schizophrenics, but a long range prospective study (rather than a retrospective one)might enable educators to develop prediction and instructional programs while children are still in their

formative years. The existence of a hard classification schema like the Quay scale will enable educators to see if there is any stability to the groupings, and then to measure if there is a deterioration in the functioning of one or more groups.

The implications for grouping and curricular development that emerge from this study should be interpreted cautiously, since much further research must still be done, but certain tentative conclusions appear warranted:

1) Ss can be grouped according to behavioral difficulties. This in itself is quite suggestive for non-academic curriculum building, e.g. Q7 does not particularly need specialized academic curriculum, i.e., different from that of normally functioning children, but it would be hoped that curricula could be devised, perhaps through desensitization techniques, to make the group less fearful and more able to enjoy life. Similarly other groups would have to learn to inhibit aggression and to learn other ways of obtaining attention, etc. The behavior (Q) groups show certain distinct patterns of learning deficits and academic curricula can definitely be geared to each group.

2) The Quay instrument satisfactorily delineates children on behavioral but not academic characteristics and appears to be feasible for the studying of each grouping of Ss in special classes along certain dimensions. The instrument itself, however, seems to be in need of some sharpening so that it can be used with individual children as well as groups.

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## Appendix A

BEHAVIOR PROBLEM CHECKLIST

Col. No.

Please complete each question carefully.

(1-8) 1. Name (or Number) of child _____

(9-10) 2. Age (in years) _____

(11) 3. Sex _____(M 1, F 2)

(12) 4. Father's Occupation _____

(13) 5. Name of person completing this checklist

_____

(14) 6. What is your relationship to this child? (Circle one)

a. Mother b. Father c. Teacher d. other _____
(Specify)

(15-16) 7. School _____

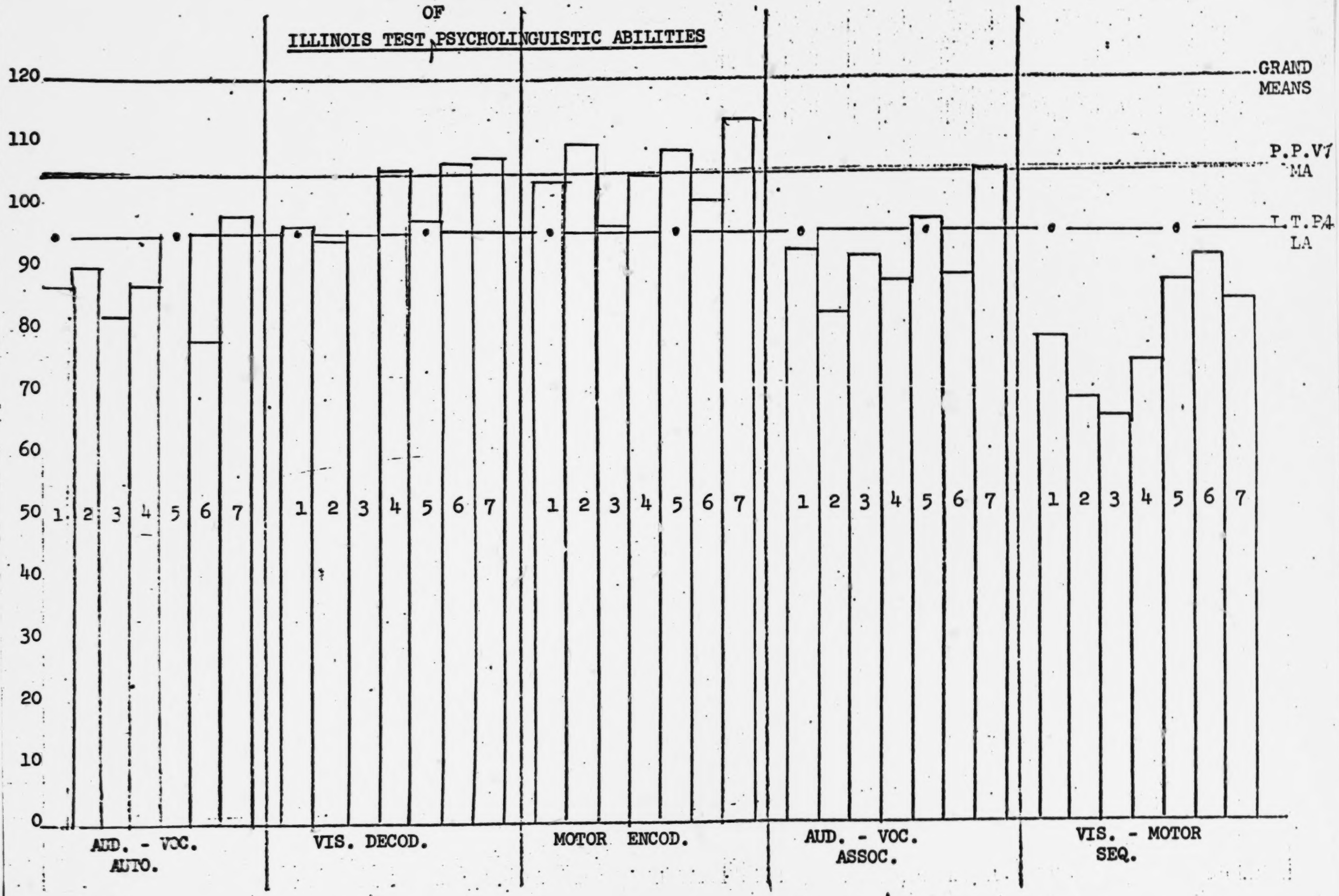
(17) 8. Grade _____

Please indicate which of the following constitute problems, as far as this child is concerned. If an item does not constitute a problem, encircle the zero; if an item constitutes a mild problem, encircle the one; if an item constitutes a severe problem, encircle the two. Please complete every item.

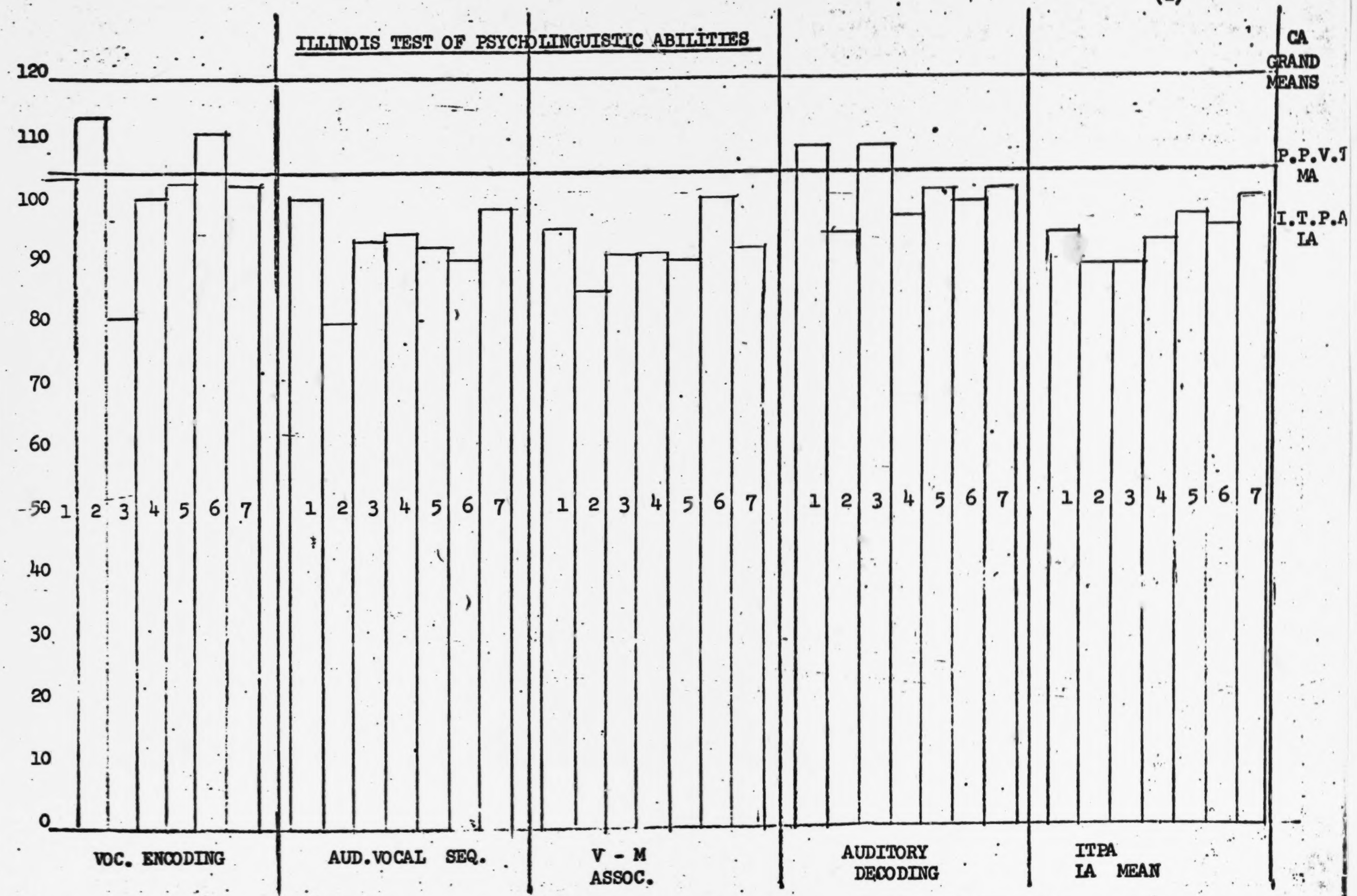
| | | | | | |
|---|---|---|---|---|---|
| (18) | 0 | 1 | 2 | 1. | Oddness, bizarre behavior |
| (19) | 0 | 1 | 2 | 2. | Restlessness, inability to sit still |
| (20) | 0 | 1 | 2 | 3. | Attention-seeking, "show-off" behavior |
| (21) | 0 | 1 | 2 | 4. | Stays out late at night |
| (22) | 0 | 1 | 2 | 5. | Doesn't know how to have fun; behaves like a little adult |
| (23) | 0 | 1 | 2 | 6. | Self-consciousness; easily embarrassed |
| (24) | 0 | 1 | 2 | 7. | Fixed expression, lack of emotional reactivity |
| (25) | 0 | 1 | 2 | 8. | Disruptiveness; tendency to annoy and bother others |
| (26) | 0 | 1 | 2 | 9. | Feelings of inferiority |
| (27) | 0 | 1 | 2 | 10. | Steals in company with others |
| (28) | 0 | 1 | 2 | 11. | Boisterousness, rowdiness |
| (29) | 0 | 1 | 2 | 12. | Crying over minor annoyances and hurts |
| (30) | 0 | 1 | 2 | 13. | Preoccupation; "in a world of his own" |
| (31) | 0 | 1 | 2 | 14. | Shyness, bashfulness |
| (32) | 0 | 1 | 2 | 15. | Social Withdrawal, preference for solitary activities |
| (33) | 0 | 1 | 2 | 16. | Dislike for school |
| (34) | 0 | 1 | 2 | 17. | Jealousy over attention paid other children |
| (35) | 0 | 1 | 2 | 18. | Belongs to a gang |
| (36) | 0 | 1 | 2 | 19. | Repetitive speech |
| (37) | 0 | 1 | 2 | 20. | Short attention span |
| (38) | 0 | 1 | 2 | 21. | Lack of self-confidence |
| (39) | 0 | 1 | 2 | 22. | Inattentiveness to what others say |
| (40) | 0 | 1 | 2 | 23. | Easily flustered and confused |
| (41) | 0 | 1 | 2 | 24. | Incoherent speech |
| (42) | 0 | 1 | 2 | 25. | Fighting |
| (43) | 0 | 1 | 2 | 26. | Loyal to delinquent friends |
| (44) | 0 | 1 | 2 | 27. | Temper tantrums |
| (45) | 0 | 1 | 2 | 28. | Reticence, secretiveness |
| (46) | 0 | 1 | 2 | 29. | Truancy from school |
| (47) | 0 | 1 | 2 | 30. | Hypersensitivity; feelings easily hurt |
| (48) | 0 | 1 | 2 | 31. | Laziness in school and in performance of other tasks |
| (49) | 0 | 1 | 2 | 32. | Anxiety, chronic general fearfulness |
| (50) | 0 | 1 | 2 | 33. | Irresponsibility, undependability |
| (51) | 0 | 1 | 2 | 34. | Excessive daydreaming |
| (52) | 0 | 1 | 2 | 35. | Masturbation |
| (53) | 0 | 1 | 2 | 36. | Has bad companions |
| (54) | 0 | 1 | 2 | 37. | Tension, inability to relax |
| (55) | 0 | 1 | 2 | 38. | Disobedience, difficulty in disciplinary control |
| (56) | 0 | 1 | 2 | 39. | Depression, chronic sadness |
| (57) | 0 | 1 | 2 | 40. | Uncooperativeness in group situations |
| (58) | 0 | 1 | 2 | 41. | Aloofness, social reserve |
| (59) | 0 | 1 | 2 | 42. | Passivity, suggestibility; easily led by others |
| (60) | 0 | 1 | 2 | 43. | Clumsiness, awkwardness, poor muscular coordination |
| (61) | 0 | 1 | 2 | 44. | Hyperactivity; "always on the go" |
| (62) | 0 | 1 | 2 | 45. | Distractibility |
| (63) | 0 | 1 | 2 | 46. | Destructiveness in regard to his own and/or other's property |
| (64) | 0 | 1 | 2 | 47. | Negativism, tendency to do the opposite of what is requested |
| (65) | 0 | 1 | 2 | 48. | Impertinence, sauciness |
| (66) | 0 | 1 | 2 | 49. | Sluggishness, lethargy |
| (67) | 0 | 1 | 2 | 50. | Drowsiness |
| (68) | 0 | 1 | 2 | 51. | Profane language, swearing, cursing |
| (69) | 0 | 1 | 2 | 52. | Nervousness, jitteriness, jumpiness; easily startled |
| (70) | 0 | 1 | 2 | 53. | Irritability; hot-tempered, easily aroused to anger |
| (71) | 0 | 1 | 2 | 54. | Enuresis, bed-wetting. |
| (72) | 0 | 1 | 2 | 55. | Often has physical complaints, e.g.headaches,stomachache |

OF

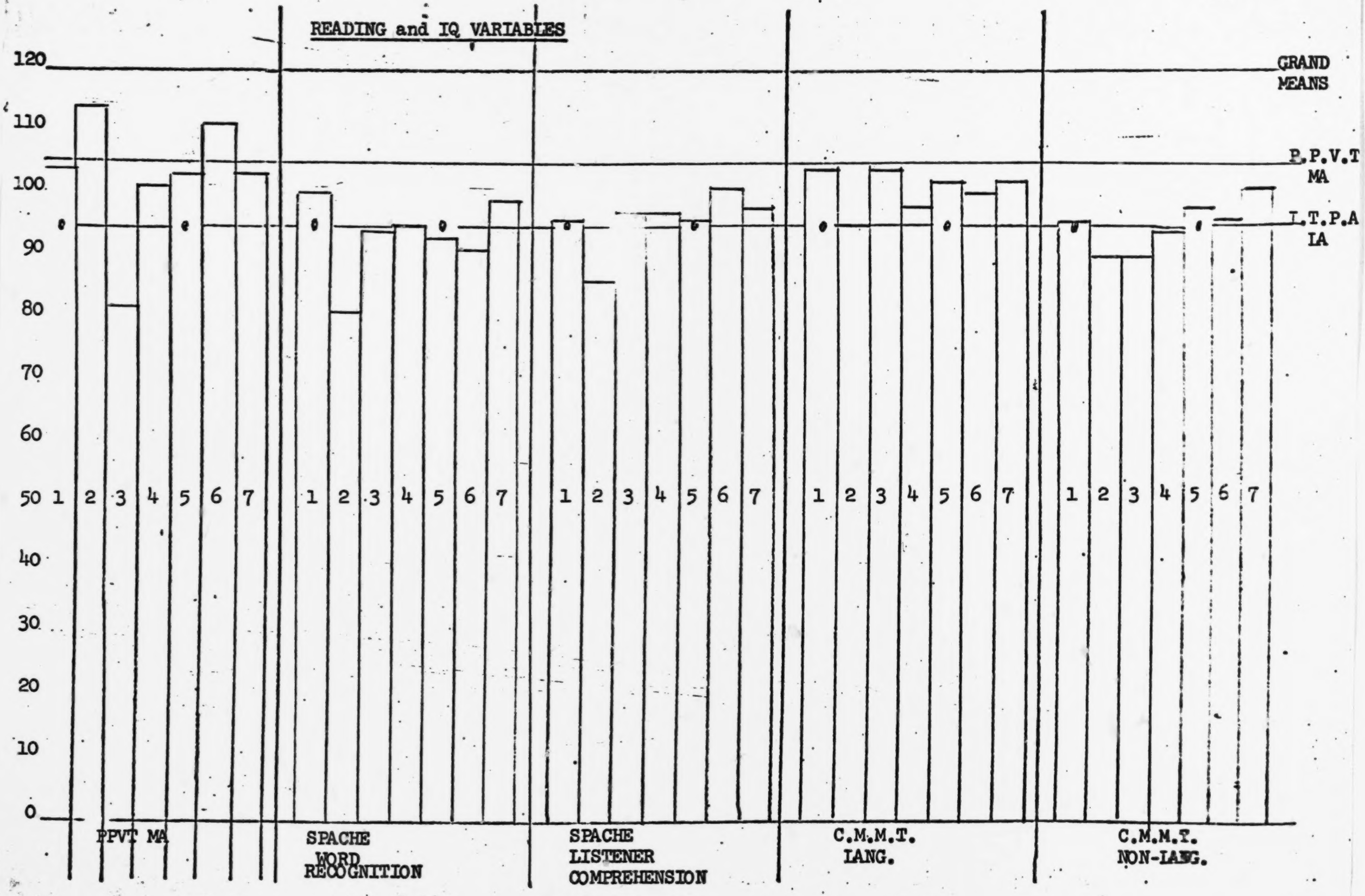
ILLINOIS TEST PSYCHOLINGUISTIC ABILITIES



## ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES



READING and IQ VARIABLES



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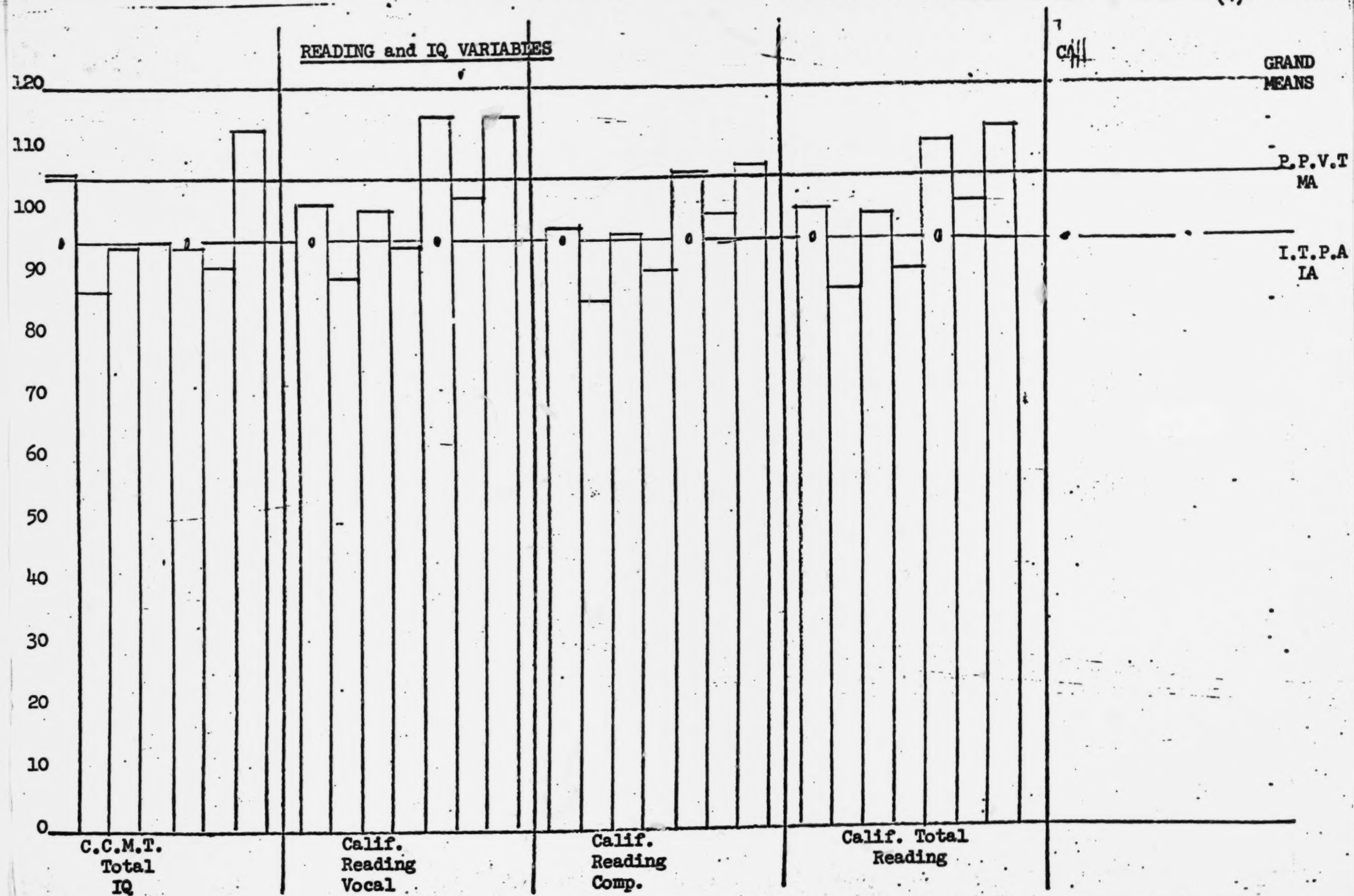
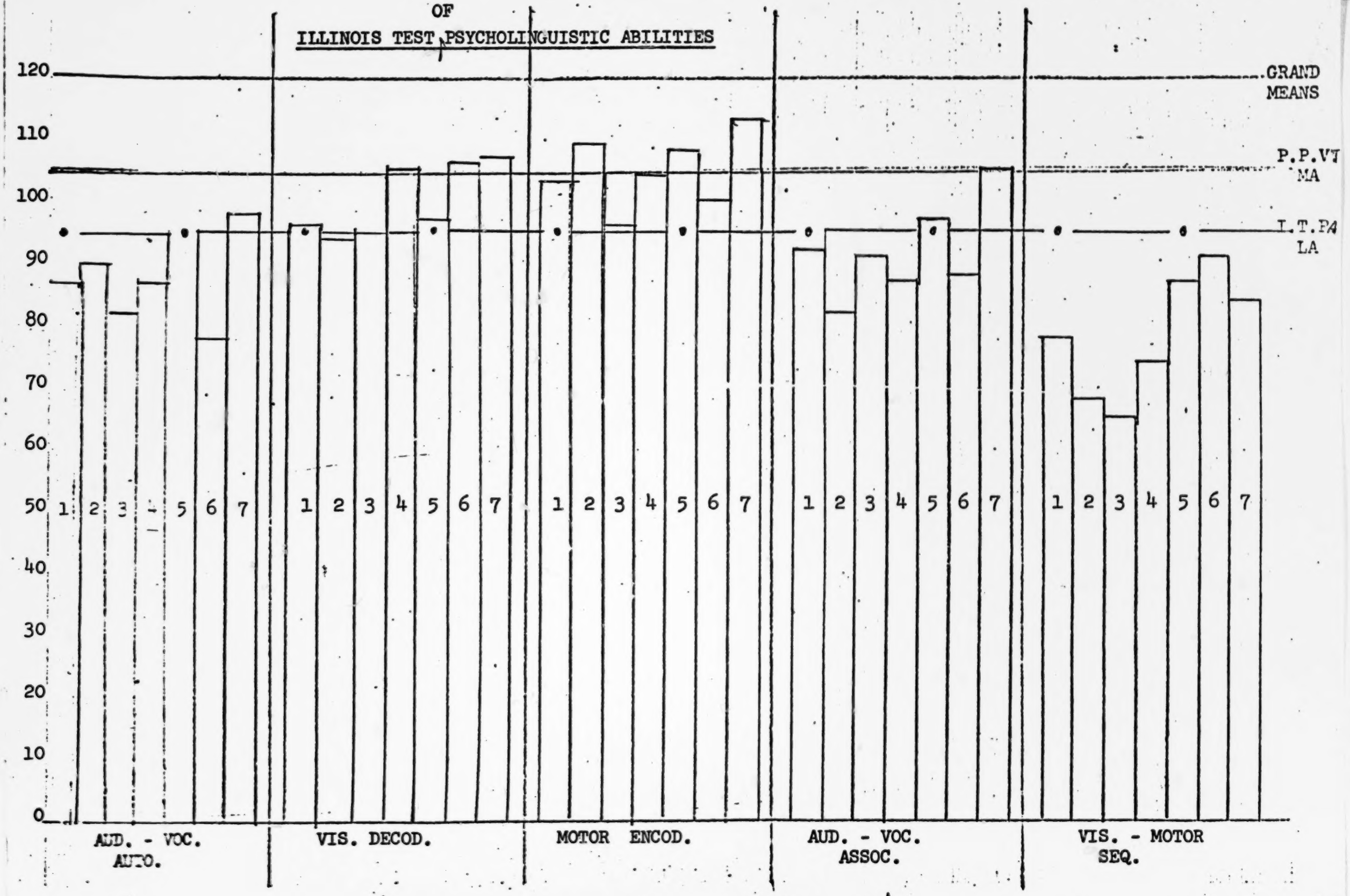


OF

ILLINOIS TEST PSYCHOLINGUISTIC ABILITIES



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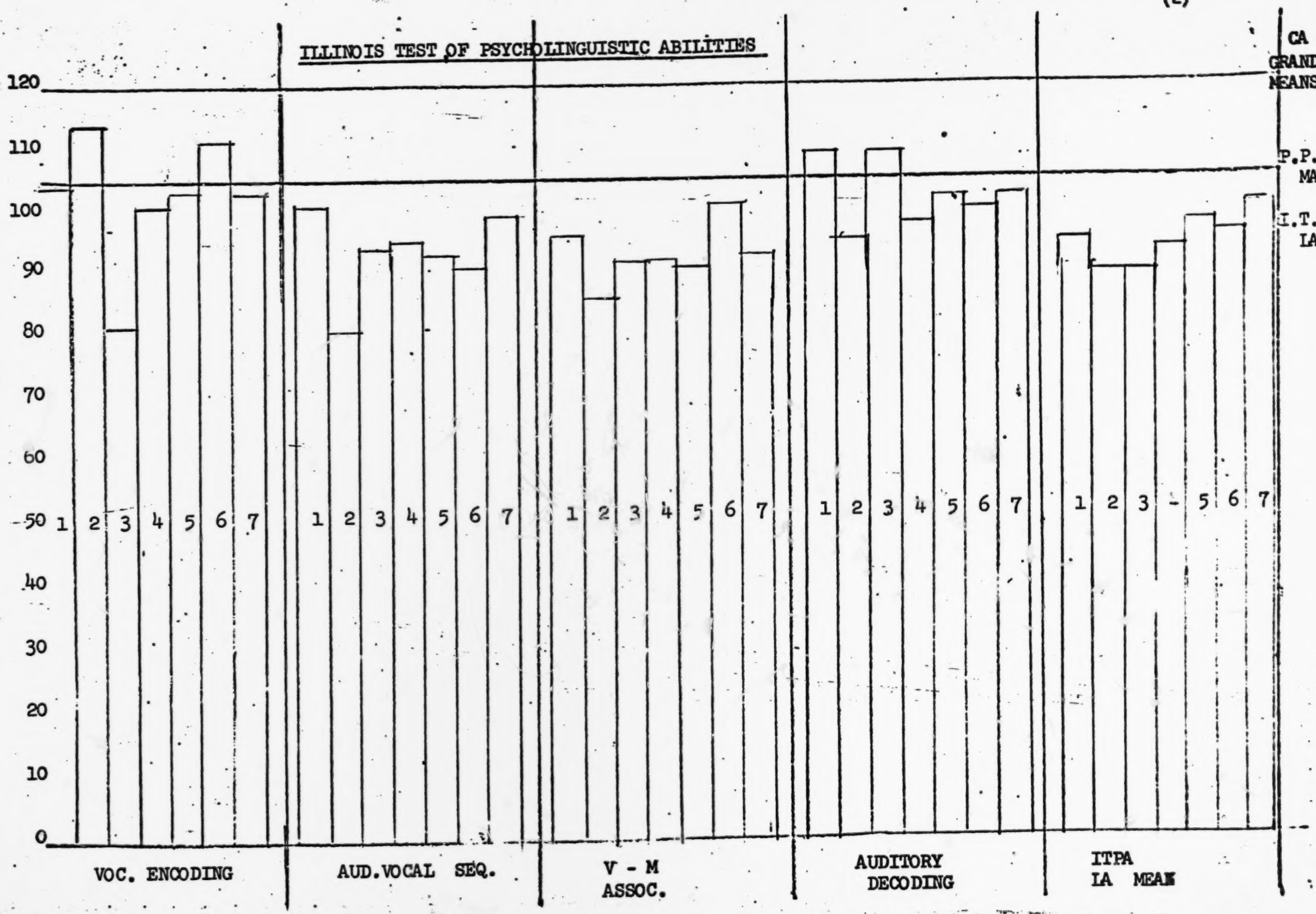

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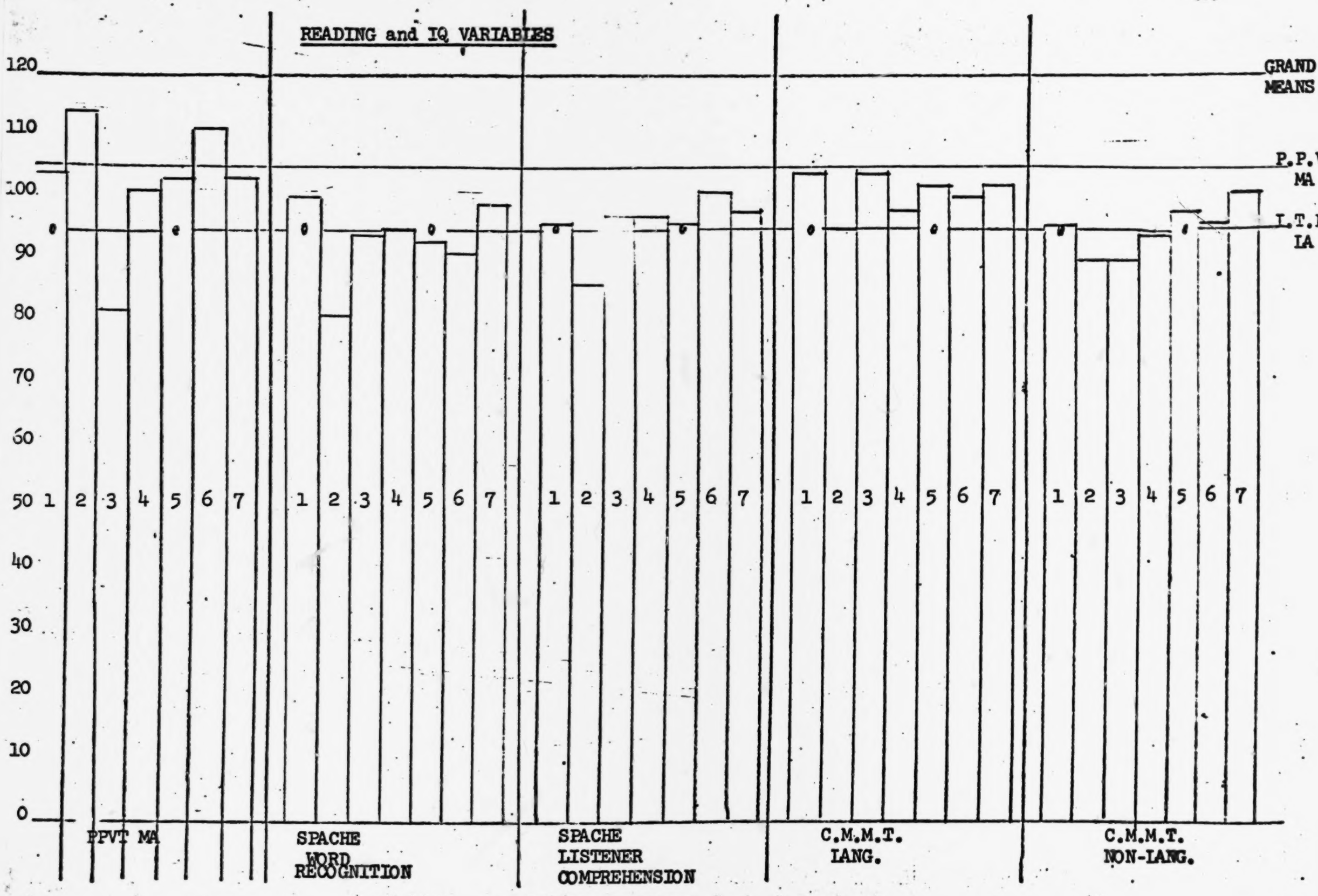

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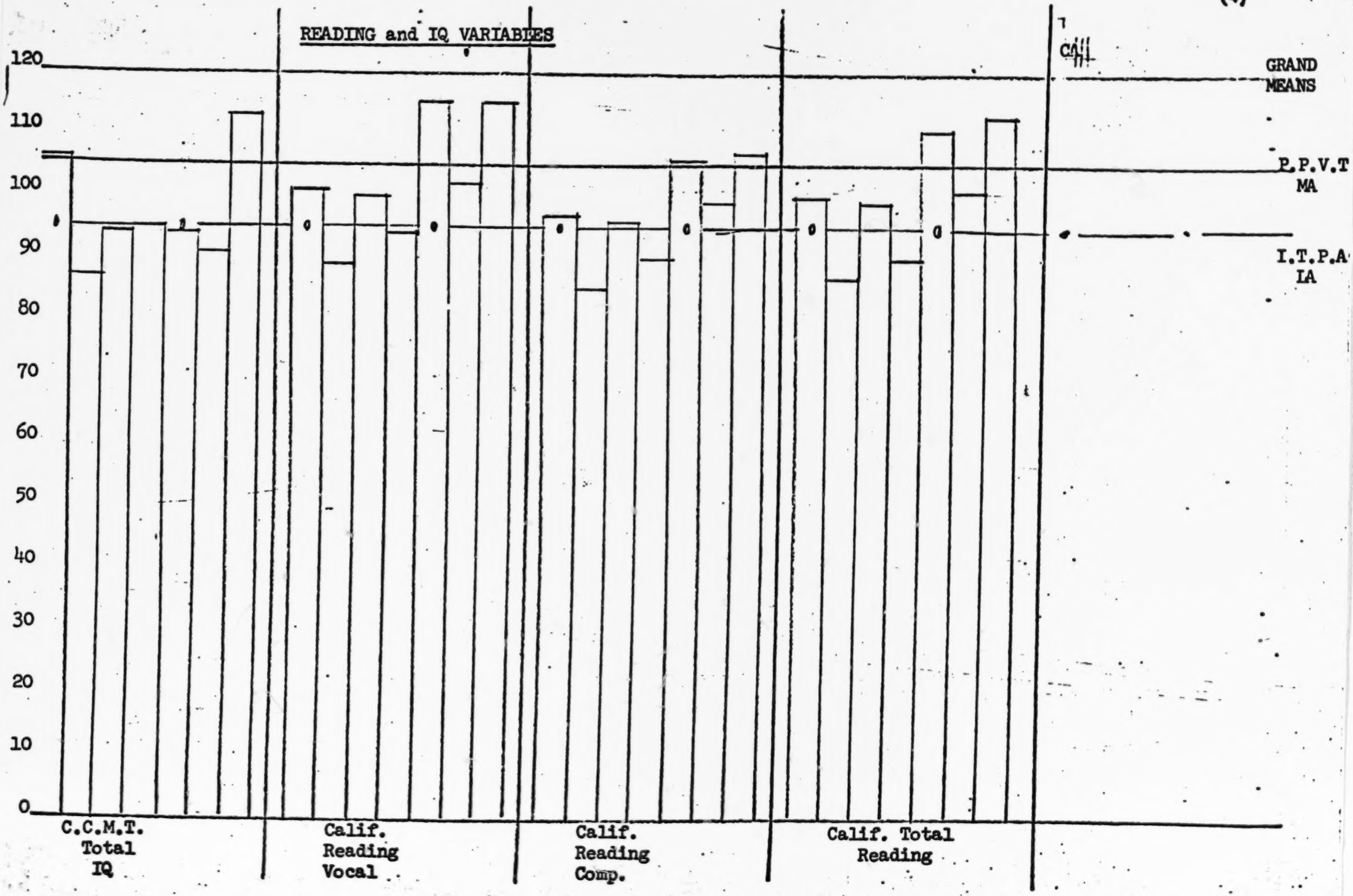

BUREAU OF EDUCATION FOR THE HANDICAPPED
DIVISION OF RESEARCH

PROJECT NO: 6-2542 (FINAL REPORT)

TITLE: An Investigation of Reading Correlates of Emotionally Disturbed and Socially Maladjusted Children: The Relevance of a Classification Scheme to Educational Characteristics

INVESTIGATOR: Paul S. Graubard

INSTITUTION: Yeshiva University
New York City, New York

FUNDS OBLIGATED: $21,844.00

OE COORDINATOR: Max W. Mueller

RECOMMENDATION: Approval

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The referenced report has been reviewed by Division of Research staff, consultant, and field readers. In the judgement of reviewers, the report is worthy of acceptance and dissemination despite serious shortcomings in editing and reproduction. The author was given an opportunity to correct obvious errors in the manuscript, but the corrected copy represents only modest improvement. Nevertheless, the overall review is sufficiently positive to justify acceptance of the report.

The principal investigator has done precisely what he set out to do in his original application for support. The final report is a comprehensive description of the problem, design and procedures to be followed; the results and implications for education of those results; the size of sample; characteristics of population; research procedures and statistical analysis. From the standpoint of the research procedures and data analyses, which logically follow the objectives set forth by the investigator, the project is technically sound. The statistical analysis is most impressive.

The report is clearly written and conveyed. Considering the complex nature of the design, the research is well done. The discussion, which centered aroung the results of the analyses, revealed a mature tone throughout the interpretation.

The educational significance is high. The results of treating subjects by learning characteristics led to general and specific kinds of educational implications for the groups of emotionally disturbed children.

The technical quality of the document is a major problem, even after an attempt at revision. Editing is still extremely loose, even to the point of raising confusion over the data at one point. Tables and figures are marginal overall, and one figure fails completely to convey the information implied. Reproduction is also marginal. Despite these severe shortcomings, it does not appear wise to withhold potentially useful information from the field because of poor penmanship.